

1-1/2" MKIV Shuttle Valve Product Line

REV	DATE	DESCRIPTION	ORIGIN (issued by)	APPROVED
Rev A	03-01-2019	Document No: 120-030119-001	AP	SS

COMPANY PROPRIETARY INFORMATION

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For more information: Call
 (800) 469-8786
Info@gilmore.com

Gilmore
 1231 Lumpkin Road
 Houston, TX 77043

1-1/2" MKIV Shuttle Valve Product Line

Proserv announces the new Gilmore 1-1/2" Mark IV Shuttle Valve product line for critical offshore and subsea applications. The 1-1/2" Mark IV Shuttle Valve product line establishes a new benchmark for reliability and serviceability in drilling control systems where redundant hydraulic pressure supplies are required.

Features and Benefits:

- Qualification exceeds API 16D requirements
 - Non Biased shuttle valves qualified to 2500 cycles at maximum flow conditions
 - Pressure and Spring Biased shuttle valves qualified to 1000 cycles at maximum flow conditions
- Shuttle metal seat no longer requires coining, simplifying on-site repairs
- All shuttle styles are hydraulically dampened
- Common stacked bodies can be readily reconfigured
- Fully serviceable shuttles and body seats can be completely redressed inline.
- Available configurations include Pressure biased, Spring biased, high interflow, low interflow, high drag, low drag options with customizable end connections and mounting provisions.
- Customizable single valve and stack valve assemblies available to suit application requirements
- Suitable for panel mounting or direct mounting
- U.S. Patent 9,915,275

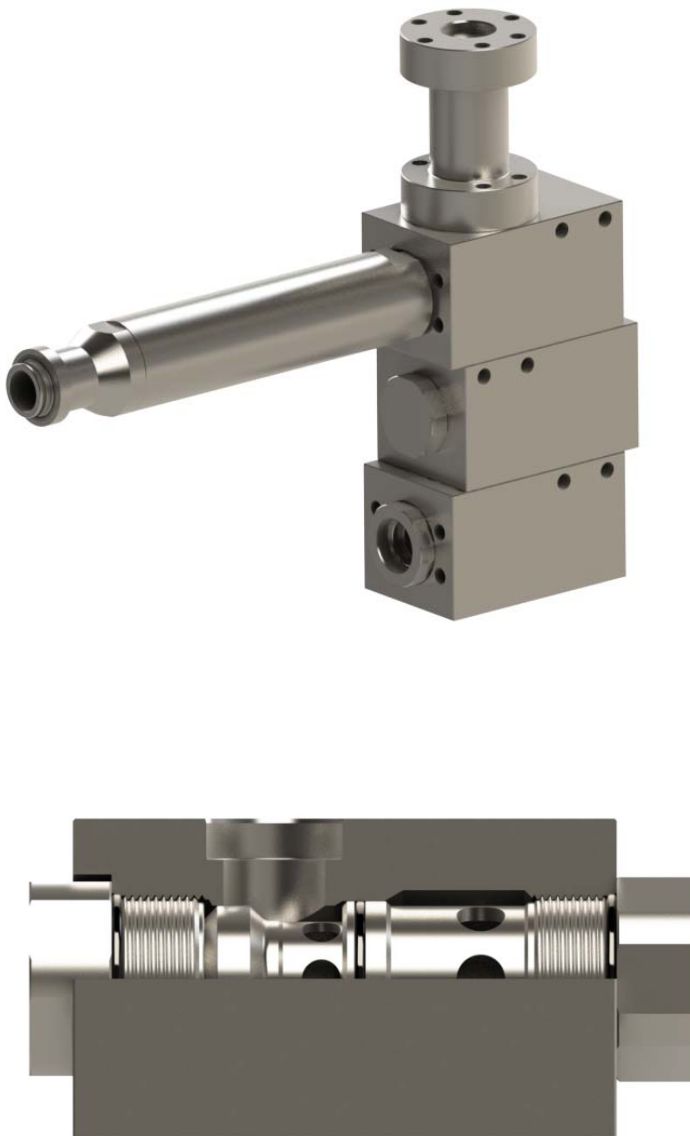


Figure 1. PN 29059: 1-1/2" MKIV Shuttle Valve, Inline, Code 62, Low Interflow, High Drag

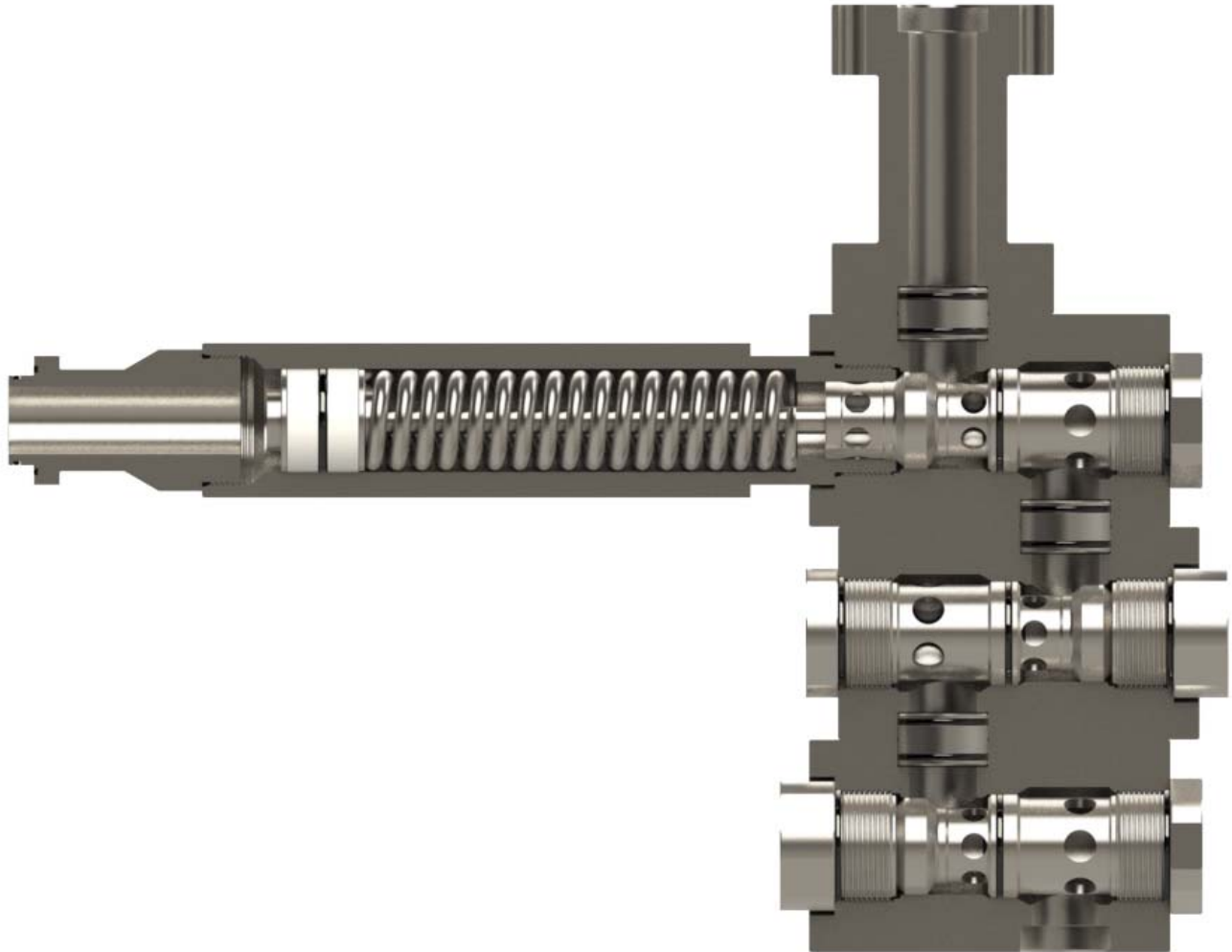


Figure 2. PN 29063: 1-1/2" MKIV Shuttle Valve, Stack, 4 Inlets, Code 62, Pressure Biased, Low Interflow, High Drag, Adapter

Proserv has exceeded API 16D requirements by qualifying the new 1-1/2" MKIV Shuttle Valve non-biased designs to multiple endurance qualification tests to 2500 cycles, at a flow rate of 275 gpm – and biased designs to 1000 cycles and 200 gpm – at 5000 psi, with 1% - 4% water glycol test fluid.

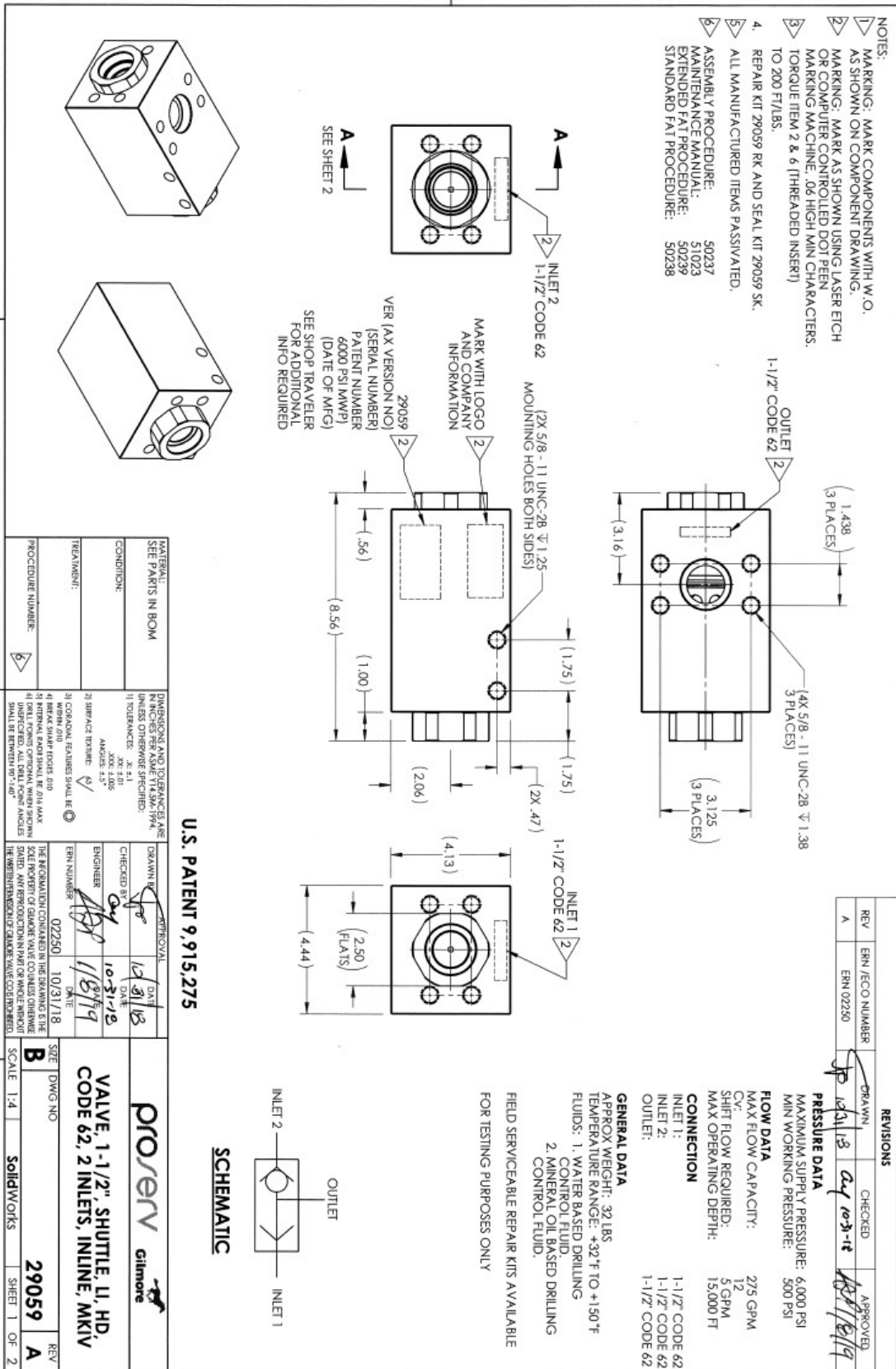
The new Proserv Gilmore 1-1/2" MKIV Shuttle Valves are now available for purchase. A few examples of typical assembly configurations are listed below for reference. Proserv Gilmore will create other customized 1-1/2" MKIV Shuttle valve configurations that are required.

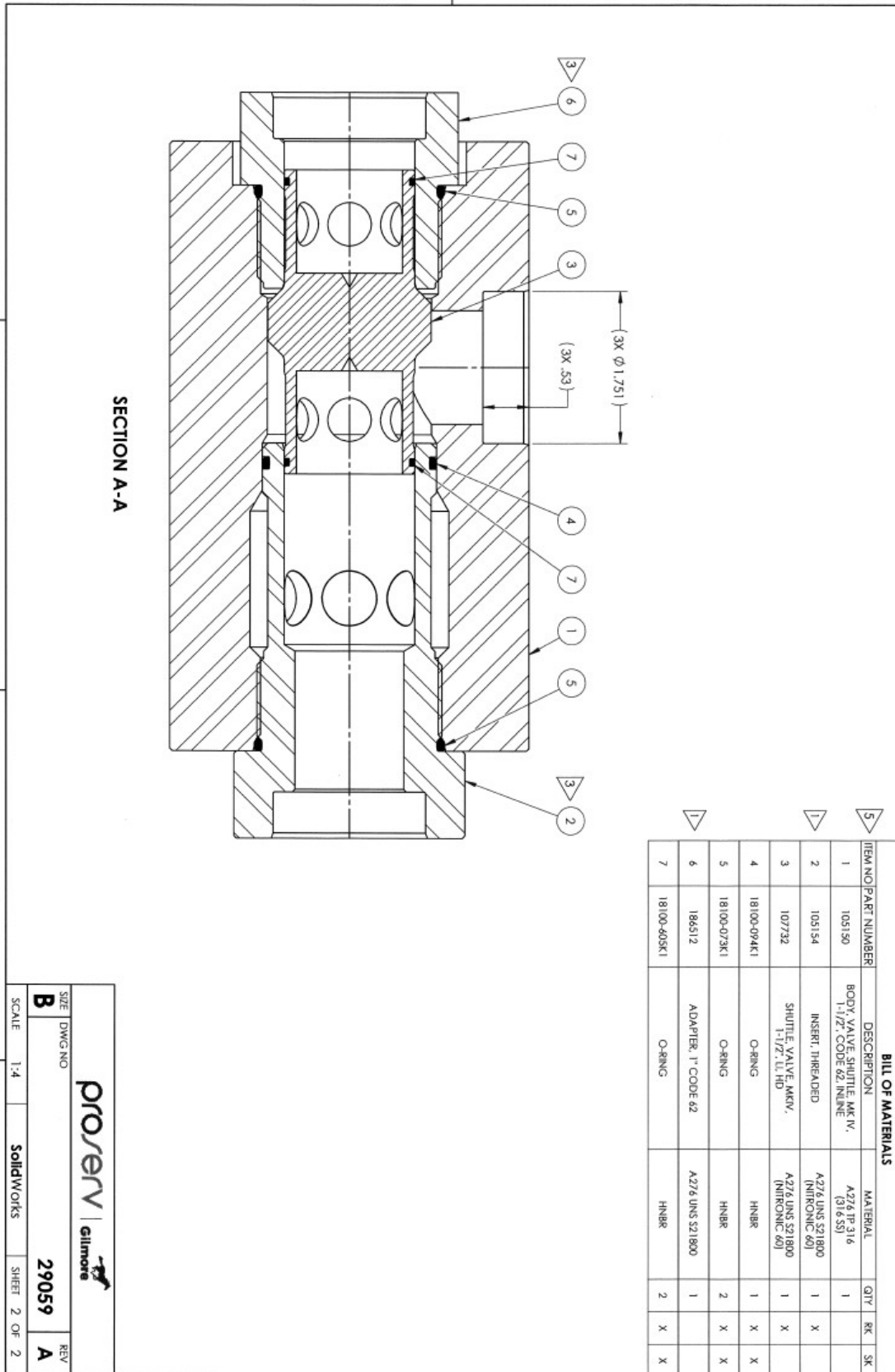
Please contact Proserv Customer Service to request a quotation for the 1-1/2" MKIV Shuttle Valves listed below, or other configurations as required.

Table 1. Examples of New 1-1/2" MKIV Shuttle Valve Part Numbers:

Item	New Valve Description	Legacy PN Reference	New Valve PN	New Repair Kit PN	New Seal Kit PN
1	Valve, MKIV, 1-1/2", Inline, Code 62, Low Interflow, High Drag	27032-0.3	29059	29059 RK	29059 SK
2	Valve, MKIV, 1-1/2", 90 Deg, Code 62, Low Interflow, High Drag	27024-2.2	29060	29060 RK	29060 SK
3	Valve, MKIV, 1-1/2" Inline, SAE, Pressure Biased, 300 psi Shift	27217	29061	29061 RK	29061 SK
4	Valve, MKIV, 1-1/2" Inline, Code 62, Spring Biased	N/A	29062	29062 RK	29062 SK
5	Valve, MKIV, 1-1/2", Stack, 4 Inlets, Code 62, Pressure Biased, 300 psi Shift, Low Interflow, High Drag, BOP Adapter	28271-4.3	29063	29063 RK	29063 SK
8	Valve, MKIV, 1-1/2", Stack, 5 Inlets, Code 62, Pressure Biased, 300 psi Shift, Low Interflow, High Drag	28283-5.3	29022	29022 RK	29022 SK

Please note at this time Proserv will continue to support the legacy 1-1/2" MKIII Shuttle Valves, which have a different footprint than the new 1-1/2" MKIV Shuttle Valves.

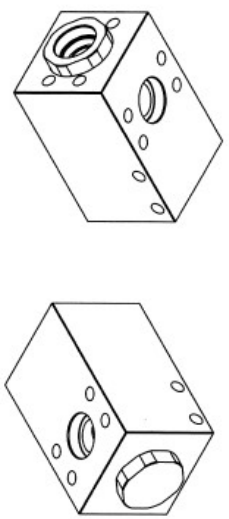
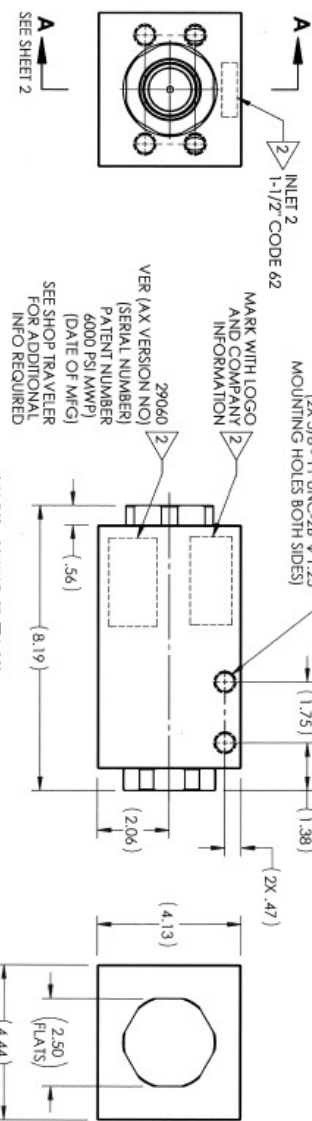
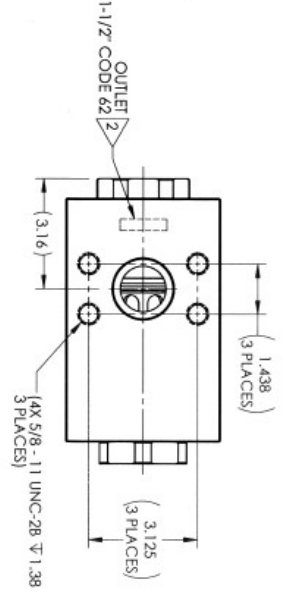




BILL OF MATERIALS						
ITEM NO	PART NUMBER	DESCRIPTION	MATERIAL	QTY	RC	SK
1	105150	BODY, VALVE, SHUTTLE, MK IV, 1-1/2" CODE 62 INLINE	A276 TP 316 (316 SS)	1		
2	105154	INSERT, THREADED	A276 UNS S21800 (INFERONIC 60)	1	X	
3	107732	SHUTTLE, VALVE, MKIV, 1-1/2", UL HD	A276 UNS S21800 (INFERONIC 60)	1	X	
4	18100-094K1	O-RING	HNBR	1	X	X
5	18100-073K1	O-RING	HNBR	2	X	X
6	186512	ADAPTER, 1" CODE 62	A276 UNS S21800	1		
7	18100-405K1	O-RING	HNBR	2	X	X

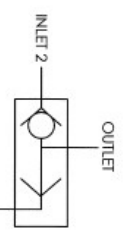
SIZE	DWG NO
B	29059
SCALE	1:4
SHEET	2 OF 2
REV	A

- NOTES:
- MARKING: MARK COMPONENTS WITH W. O. AS SHOWN ON COMPONENT DRAWING.
 - MARKING: MARK AS SHOWN USING LASER ETCH OR COMPUTER CONTROLLED DOT PATTERN MARKING MACHINE; .06 HIGH MIN CHRACTERS, TORQUE ITEM 2 & 6 (THREADED INSERT) TO 200 FT/LBS.
 - REPAIR KIT 29060 RK AND SEAL KIT 29060 SK.
 - ALL MANUFACTURED ITEMS PASSIVATED.
 - ASSEMBLY PROCEDURE: 50237
 - MAINTENANCE MANUAL: 51023
 - EXTENDED FAT PROCEDURE: 50239
 - STANDARD FAT PROCEDURE: 50238



U.S. PATENT 9,915,275

SCHEMATIC



REV	ENR / ECO NUMBER	DRAWN	CHECKED	APPROVED
A	ERN 022250	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>

REVISIONS

GENERAL DATA
 APPROX WEIGHT: 32 LBS
 TEMPERATURE RANGE: +32°F TO +150°F
 FLUIDS: 1. WATER BASED DRILLING CONTROL FLUID.
 2. MINERAL OIL BASED DRILLING CONTROL FLUID.

FIELD SERVICEABLE REPAIR KITS AVAILABLE FOR TESTING PURPOSES ONLY

PRESSURE DATA
 MAXIMUM SUPPLY PRESSURE: 6,000 PSI
 MAX WORKING PRESSURE: 500 PSI

FLOW DATA
 MAX FLOW CAPACITY: 275 GPM
 CV: 12
 SHIFT FLOW REQUIRED: 10 GPM
 MAX OPERATING DEPTH: 15,000 FT

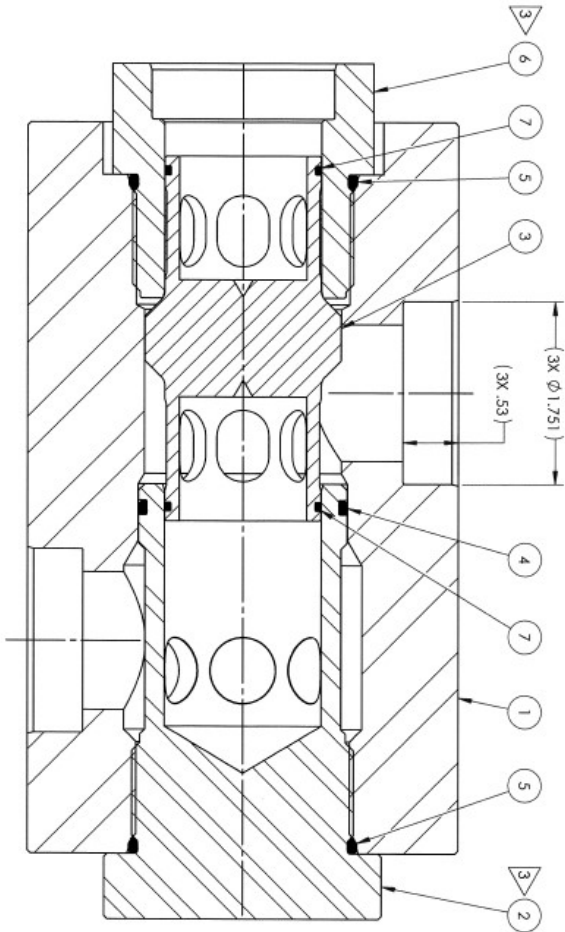
CONNECTION
 INLET 1: 1-1/2" CODE 62
 INLET 2: 1-1/2" CODE 62
 OUTLET: 1-1/2" CODE 62

MATERIAL:	SEE PARTS IN BOM
CONGRUENCE:	UNLESS OTHERWISE SPECIFIED: FINISH: 32 TOLERANCES: .005, .010, .015, .020, .030, .040, .050, .060, .070, .080, .090, .100, .125, .150, .175, .200, .250, .300, .375, .450, .500, .625, .750, .875, 1.000, 1.250, 1.500, 1.750, 2.000, 2.500, 3.000, 3.750, 4.500, 5.000, 6.000, 7.500, 9.000, 10.000, 12.500, 15.000, 17.500, 20.000, 25.000, 30.000, 37.500, 45.000, 50.000, 60.000, 75.000, 90.000, 100.000, 125.000, 150.000, 175.000, 200.000, 250.000, 300.000, 375.000, 450.000, 500.000, 600.000, 750.000, 900.000, 1000.000
TREATMENT:	31 COGNOMIAL FINISH SHALL BE
PROCEDURE NUMBER:	6

APPROVAL	DATE
<i>[Signature]</i>	10/31/18
ENGINEER	DATE
<i>[Signature]</i>	10/31/18
ENR NUMBER	DATE
022250	10/31/2058
SCALE	1:4
SHEET	1 OF 2

VALE, 1-1/2", SHUTTLE, HI, HD
CODE 62, 2 INLETS, 90 DEG, MK IV

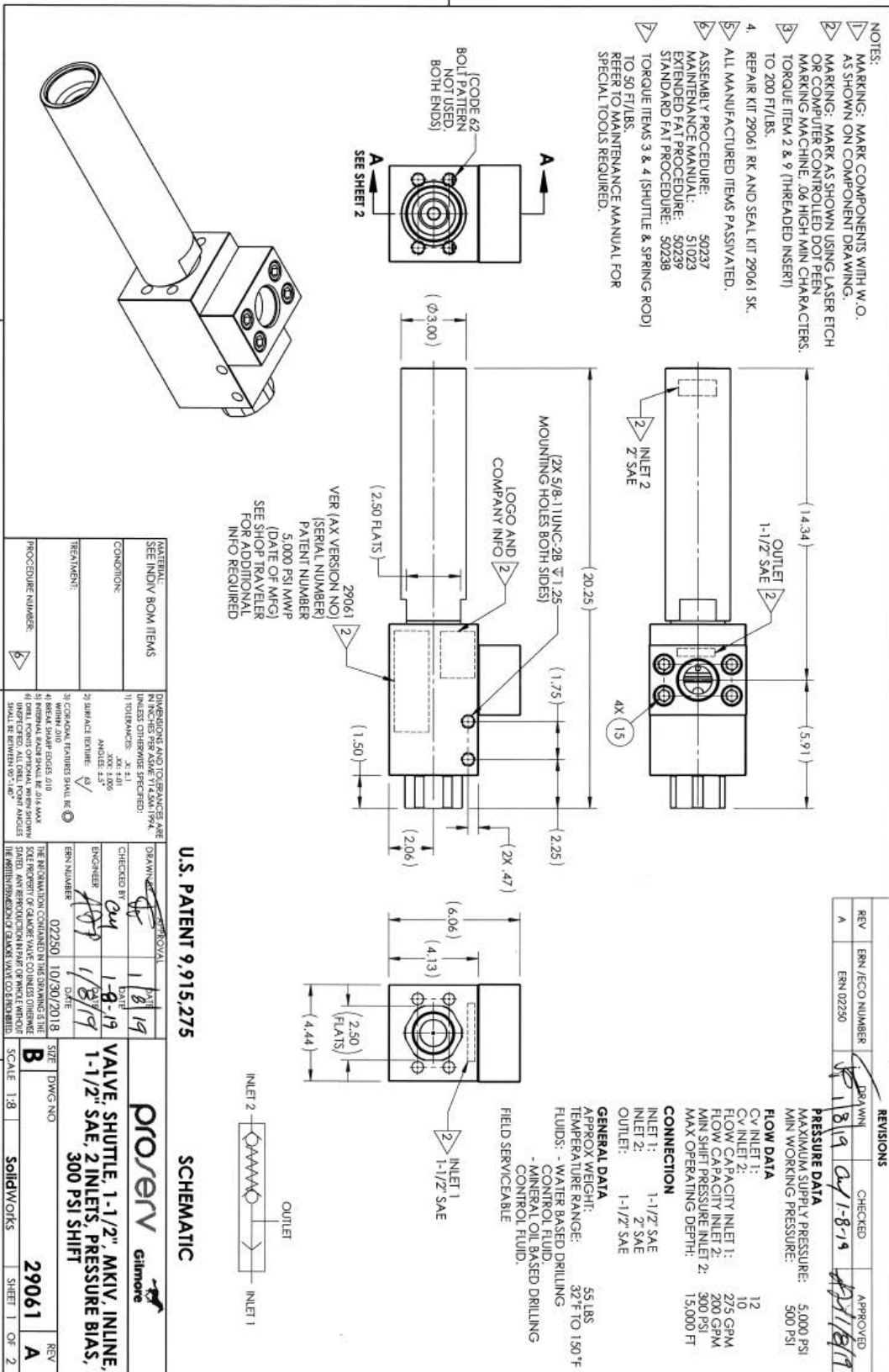
29060

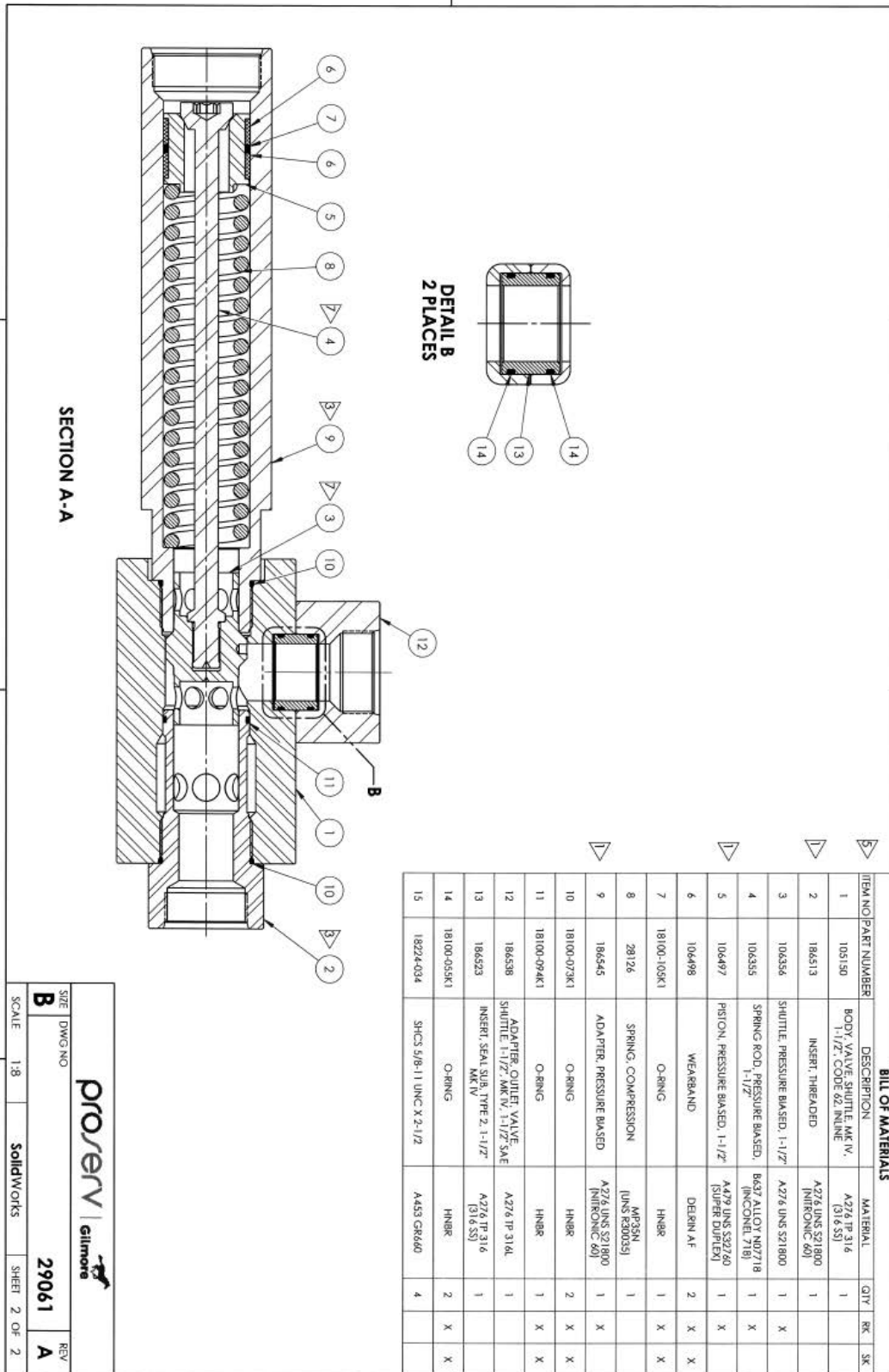


SECTION A-A

ITEM NO	PART NUMBER	DESCRIPTION	MATERIAL	QTY	PK	SK
1	186540	BODY, VALVE SHUTTLE MK IV, 1-1/2" CODE 62, 90 DEG	A276 TP 316 (316 SS)	1		
2	105352	INSERT, THREADED	A276 UNS S21800 (INCONEL 60)	1	X	
3	186547	SHUTTLE VALVE ARMV, 1-1/2" HI HD	A276 UNS S21800 (INCONEL 60)	1	X	
4	18100-094K1	O-RING	HNBR	1	X	X
5	18100-073K1	O-RING	HNBR	2	X	X
6	186512	ADAPTER, 1" CODE 62	A276 UNS S21800	1		
7	18100-405K1	O-RING	HNBR	2	X	X

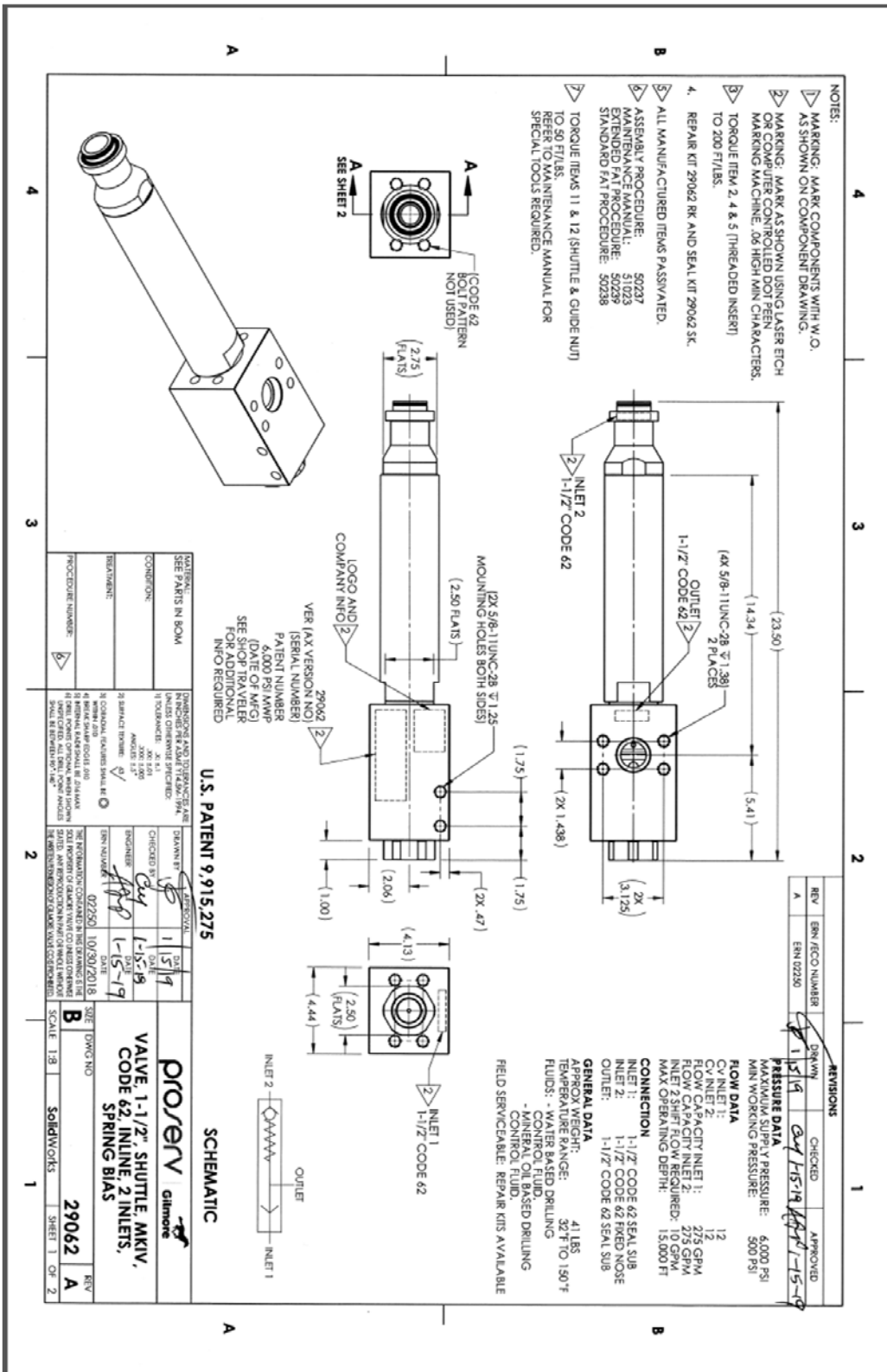
SITE	DWG NO
B	29060
SCALE	REV
1:4	A
SolidWORKS	SHEET 2 OF 2

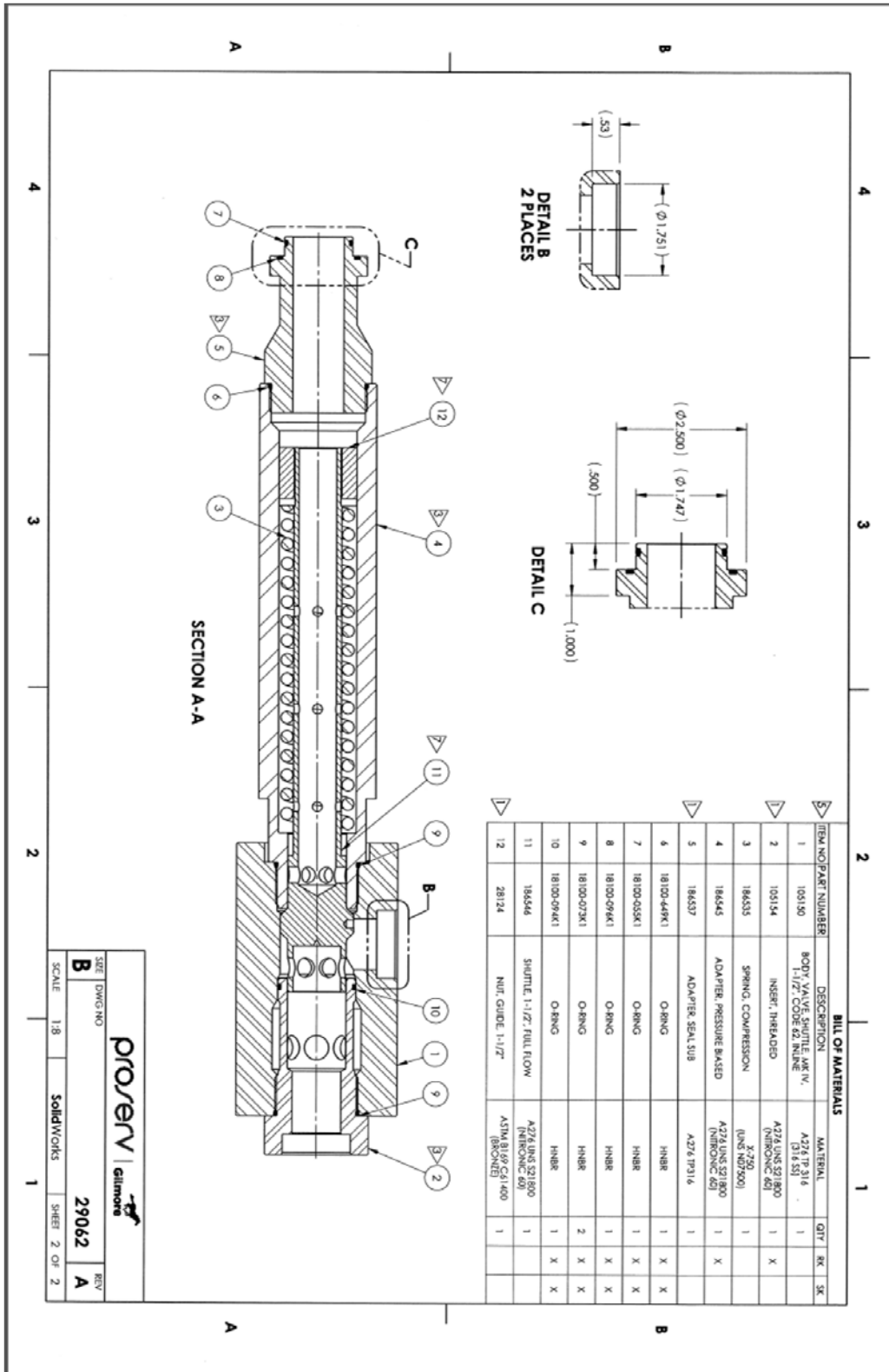




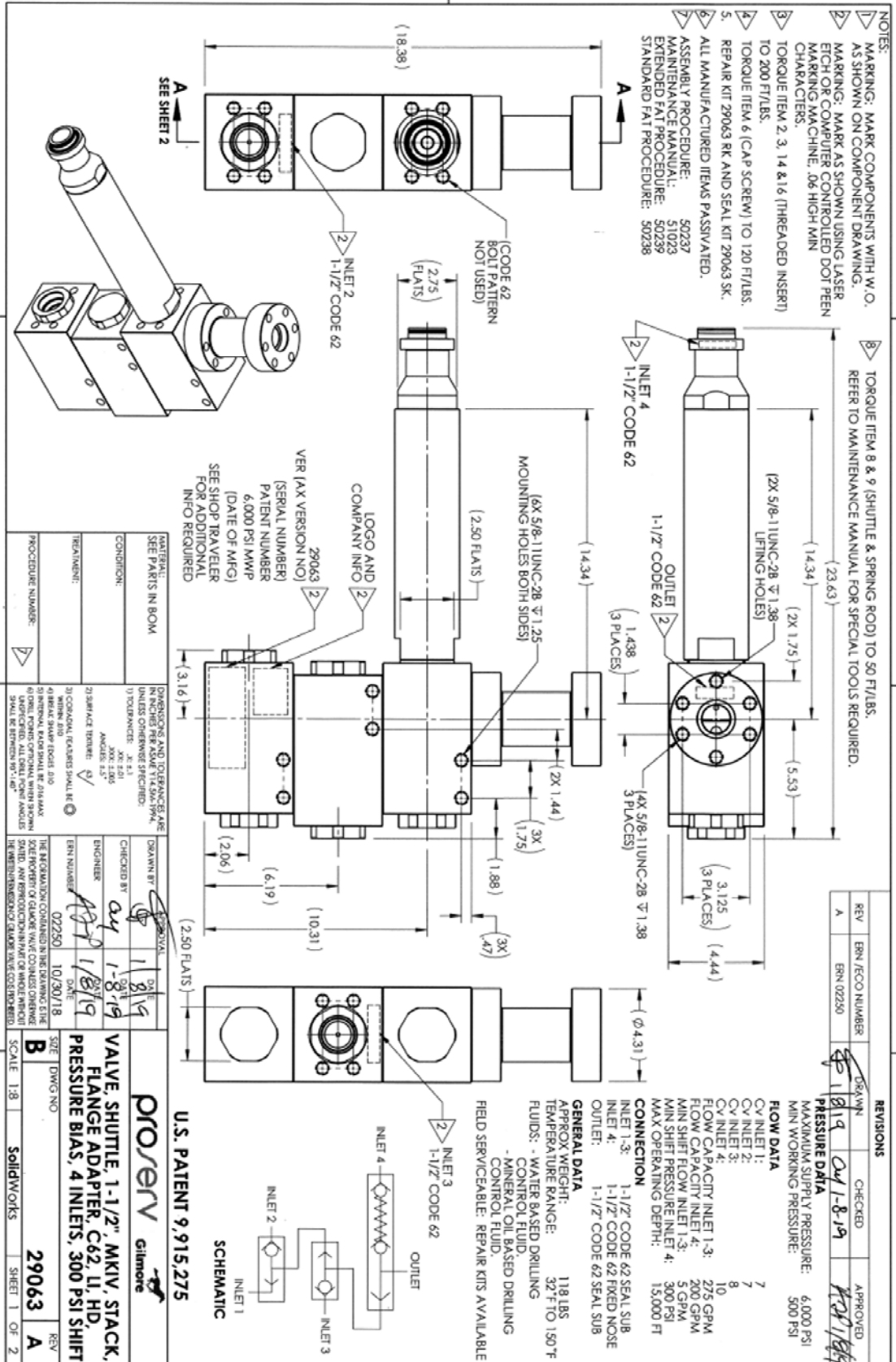
SIZE DWG NO **B** 29061 REV **A**

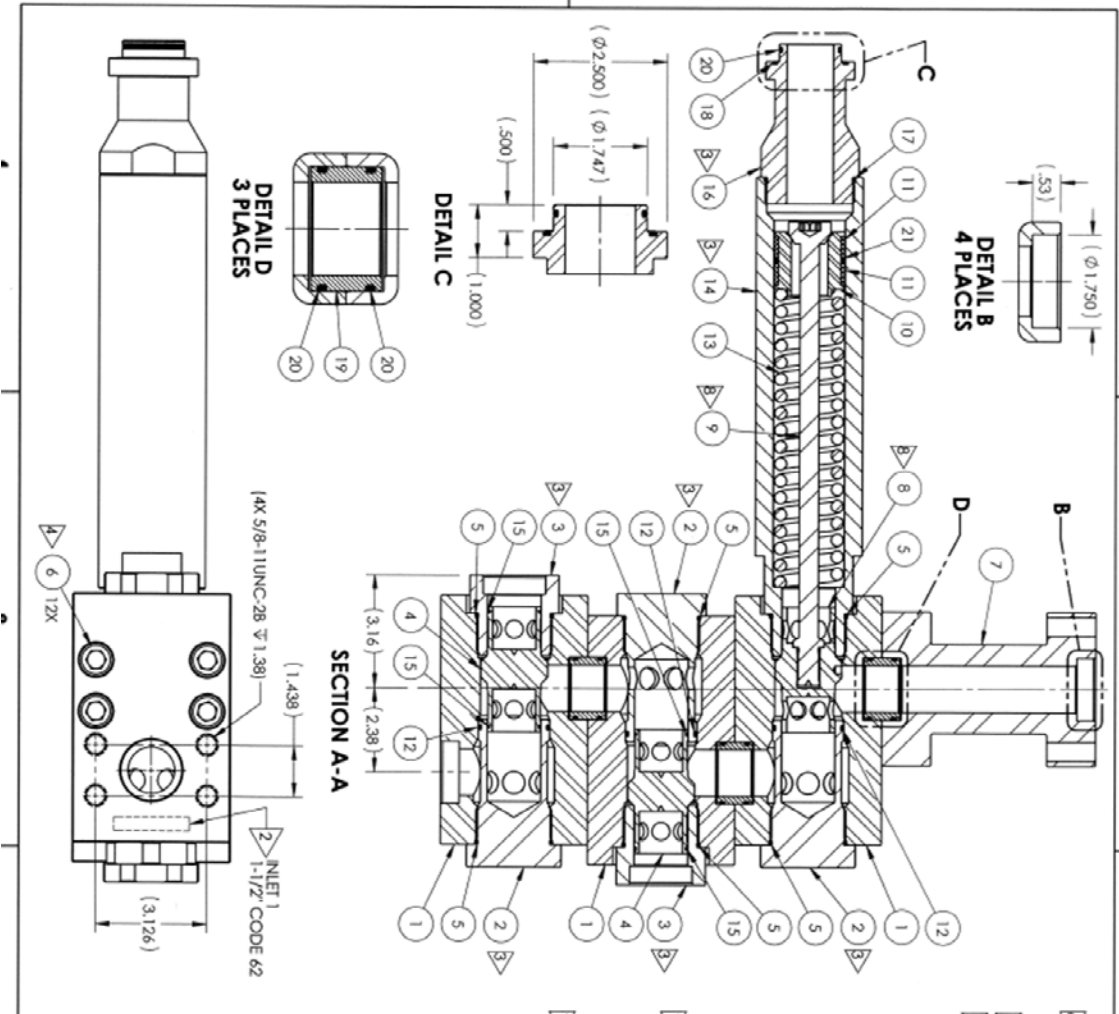
SCALE 1:8 SolidWorks SHEET 2 OF 2





SIZE	DWG NO	29062	REV
B			A
SCALE	1:8	SolidWORKS	SHEET 2 OF 2





BILL OF MATERIALS

ITEM NO.	PART NUMBER	DESCRIPTION	MATERIAL	QTY	PK	SK
1	105351	BODY VALVE SHUTTLE MK IV, 1-1/2", CODE 62, SNACHED	A274 TP 316 (316.53)	3		
2	105352	INSERT, THREADED	A274 UNS S21800 (INCONEL 60)	3	X	
3	186512	ADAPTER, 1" CODE 62	A274 UNS S21800	2		
4	107732	SHUTTLE VALVE, MK IV, 1-1/2", LL HD	A274 UNS S21800 (INCONEL 60)	2	X	
5	18100-073K1	O-RING	HNBR	6	X	X
6	18224-068	SHCS, 5/8 - 11 UNC X 4-1/2 LG	A453 GR 660	12		
7	103156	ADAPTER, OUTLET, CODE 62, 1-1/2"	A274 TP 316 (316.53)	1		
8	106356	SHUTTLE, PRESSURE BIASED, 1-1/2"	A274 UNS S21800	1	X	
9	106355	SPRING ROD, PRESSURE BIASED, 1-1/2"	B637 ALLOY N07718 (INCONEL 718)	1	X	
10	106497	PISTON, PRESSURE BIASED, 1-1/2"	A429 UNS S32260 (SUPER DUPREX)	1	X	
11	106498	WEAR BAND	DELFIN AF	2	X	X
12	18100-094K1	O-RING	HNBR	3	X	X
13	28126	SPRING, COMPRESSION	MARZUTI (UNS 6200351)	1		
14	186545	ADAPTER, PRESSURE BIASED	A274 UNS S21800 (INCONEL 60)	1	X	
15	18100-069K1	O-RING	HNBR	4	X	X
16	186537	ADAPTER, SEAL SUB	A274 TP316	1		
17	18100-049K1	O-RING	HNBR	1	X	X
18	18100-094K1	O-RING	HNBR	1	X	X
19	186523	INSERT, SEAL SUB, TYPE 2, 1-1/2" MK IV	A274 TP 316 (316.53)	3		
20	18100-055K1	O-RING	HNBR	7	X	X
21	18100-105K1	O-RING	HNBR	1	X	X

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SIZE DWG NO **B** 29063 REV **A**

SCALE 1:8 SolidWorks SHEET 2 OF 2

NOTES:

- MARKING: MARK COMPONENTS WITH W.O. AS SHOWN ON COMPONENT DRAWING.
- MARKING: MARK AS SHOWN USING LASER ETCH OR COMPUTER CONTROLLED DOT PENE MARKING MACHINE. .06 HIGH MIN CHARACTERS. TORQUE ITEM 2, 3, 13 & 15 (THREADED INSERT) TO 200 FT/LBS.
- TORQUE ITEM 6 (CAP SCREW) TO 120 FT/LBS.
- REPAIR KIT PN 29022 RK AND SEAL KIT PN 29022 SK.
- ALL MANUFACTURED ITEMS PASSIVATED.
- ASSEMBLY PROCEDURE: 50237
- MAINTENANCE MANUAL: 51023
- EXTENDED FAT PROCEDURE: 50239
- STANDARD FAT PROCEDURE: 50238
- TORQUE ITEM 7 & 8 (SHUTTLE & SPRING ROD) TO 50 FT/LBS.
- REFER TO MAINTENANCE MANUAL FOR SPECIAL TOOLS REQUIRED.

(CODE 62 BOLT PATTERN NOT USED)
 (2.75) (FLATS)
 (14.34)
 (23.63)
 (1.434)
 (5.53)
 (2X)
 (2.50) (FLATS)
 INLET 5
 1-1/2" CODE 62
 INLET 3
 1-1/2" CODE 62
 (4X 5/8-11UNC-2B T 1.38 3 PLACES)
 (3X 1.438)
 (3X 3.126)
 (8X 5/8-11UNC-2B T 1.25 MOUNTING HOLES BOTH SIDES)
 (2.50 FLATS)
 (1.44)
 (3X)
 (1.88)
 (8X .47)
 (1.44)
 (10.31)
 (6.19)
 (1.206)
 (3X)
 (.56)
 (4X 1.75)
 (4.44)
 INLET 4
 1-1/2" CODE 62
 (4.44)
 INLET 2
 1-1/2" CODE 62
 INLET 3
 1-1/2" CODE 62
 INLET 4
 1-1/2" CODE 62
 INLET 5
 1-1/2" CODE 62
 OUTLET
 INLET 1
 INLET 2
 INLET 3
 INLET 4
 INLET 5

VER (MAX VERSION NO)
 (SERIAL NUMBER)
 PATENT NUMBER
 6,000 PSI MWP
 (DATE OF MFG)
 SEE SHOP TRAVELER FOR ADDITIONAL INFO REQUIRED

LOGO AND COMPANY INFO
 29022
 (SERIAL NUMBER)
 PATENT NUMBER
 6,000 PSI MWP
 (DATE OF MFG)
 SEE SHOP TRAVELER FOR ADDITIONAL INFO REQUIRED

REVISIONS
 REV | ERM | ERM NO | CHECKED | APPROVED
 A | ERM 02250 | [Signature] | 01-18-19 | [Signature]

GENERAL DATA
 APPROX WEIGHT: 150 LBS
 TEMPERATURE RANGE: 32°F TO 150°F
 FLUIDS: WATER BASED DRILLING CONTROL FLUID, MINERAL OIL BASED DRILLING CONTROL FLUID.
 FIELD SERVICEABLE: REPAIR KITS AVAILABLE

FLOW DATA
 CV INLET 1: 6
 CV INLET 2: 6
 CV INLET 3: 7
 CV INLET 4: 8
 CV INLET 5: 10
 FLOW CAPACITY INLET 1-4: 275 GPM
 FLOW CAPACITY INLET 5: 200 GPM
 MIN SHIF FLOW INLET 1-4: 5 GPM
 MIN SHIF FLOW INLET 5: 300 PSI
 MAX OPERATING DEPTH: 15,000 FT

CONNECTION
 INLET 1-4: 1-1/2" CODE 62 SEAL SUB
 INLET 5: 1-1/2" CODE 62 FIXED NOSE
 OUTLET: 1-1/2" CODE 62 SEAL SUB

SCHEMATIC
 INLET 1
 INLET 2
 INLET 3
 INLET 4
 INLET 5
 OUTLET

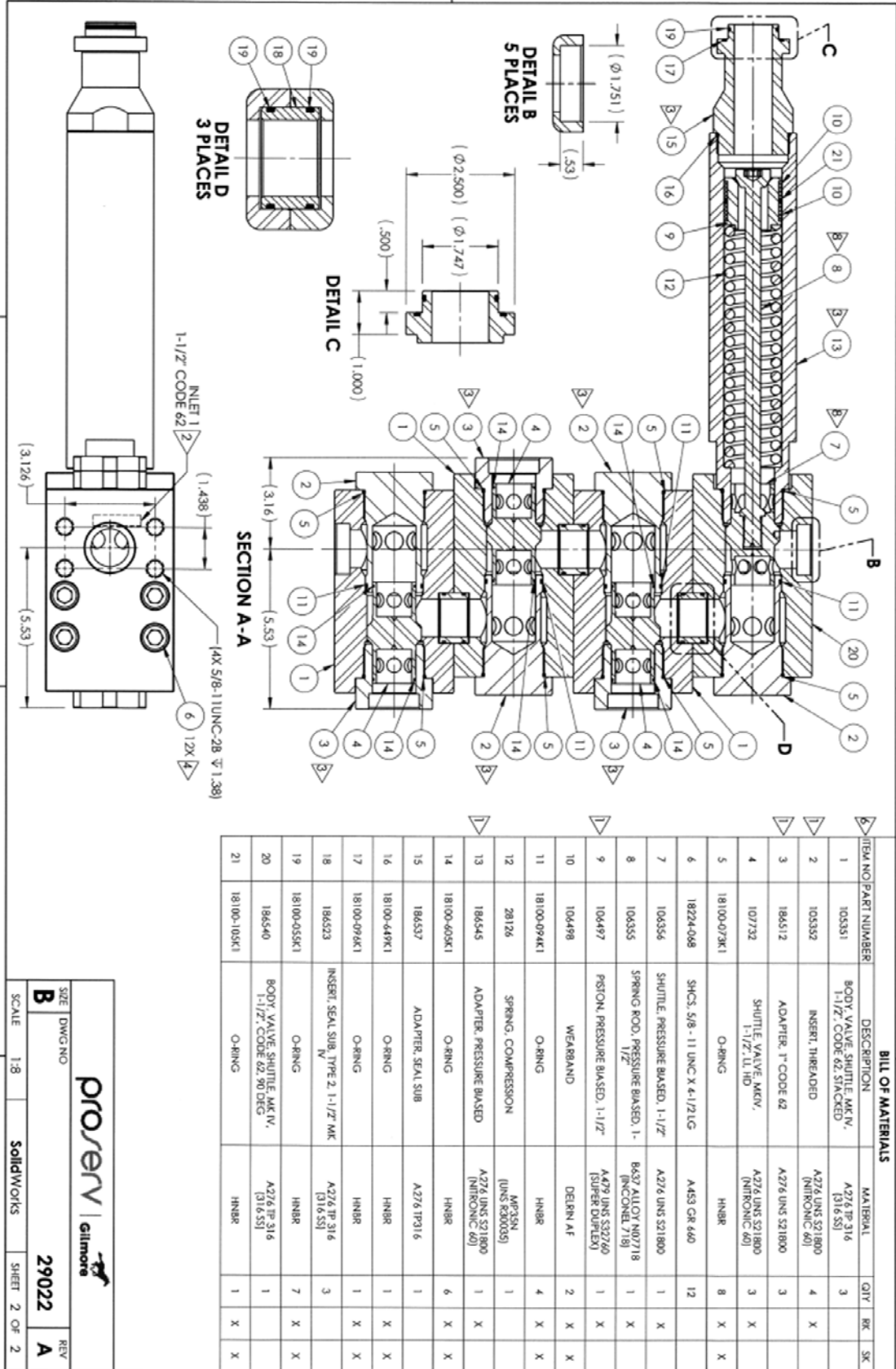
U.S. PATENT 9,915,275

proserv Gilmore
 VALVE, 1-1/2" SHUTTLE, MKIV, STACK, C62, PRESS BIAS, LI HD, 5 INLETS, 300 PSI SHIF

DRAWN BY: [Signature]
 CHECKED BY: [Signature]
 ENGINEER: [Signature]
 DATE: 1/18/19

DOWNGRADING AND TOLERANCES ARE IN UNLESS OTHERWISE SPECIFIED:
 UNITS: DIMENSIONS: INCHES
 ANGLES: DEGREES
 FINISHES: AS SHOWN
 DIMENSIONS SHOWN IN PARENT BRACKET SHOULD BE DIMENSIONS UNLESS OTHERWISE SPECIFIED
 DIMENSIONS SHOWN IN PARENT BRACKET SHOULD BE DIMENSIONS UNLESS OTHERWISE SPECIFIED

DRAWING NO: 02250
 DATE: 10/29/2018
 SCALE: 1:8
 SHEET 1 OF 2



BILL OF MATERIALS

ITEM NO/PART NUMBER	DESCRIPTION	MATERIAL	QTY	RE	SK
1	106331 BODY VALVE SHUTTLE MK'IV, 1-1/2", CODE 62, STACKEO	A276 TP 316 (316 SS)	3		
2	106332 INSERT, THREADED	A276 UNS S21800 (INCONEL 60)	4	X	
3	186312 ADAPTER, 1" CODE 62	A276 UNS S21800	3		
4	107732 SHUTTLE VALVE, MK'IV, 1-1/2", LL, HD	A274 UNS S21800 (INCONEL 60)	3	X	
5	18100-073K1 O-RING	HNBR	8	X	X
6	18224-048 SHCS, 5/8 - 11 UNC X 4-1/2 LG	A453 CR 640	12		
7	106356 SHUTTLE, PRESSURE BIASED, 1-1/2"	A276 UNS S21800	1	X	
8	106355 SPRING ROD, PRESSURE BIASED, 1-1/2"	B457 ALLOY N07718 (INCONEL 718)	1	X	
9	106497 PISTON, PRESSURE BIASED, 1-1/2"	A479 UNS S32760 (SUPER DUPLEX)	1	X	
10	106498 WEAR BAND	DELFIN AF	2	X	X
11	18100-094K1 O-RING	HNBR	4	X	X
12	28126 SPRING, COMPRESSION	MPC35N (UNS R300035)	1		
13	186454 ADAPTER, PRESSURE BIASED	A274 UNS S21800 (INCONEL 60)	1	X	
14	18100-603K1 O-RING	HNBR	6	X	X
15	186437 ADAPTER, SEAL SUB	A276 TP316	1		
16	18100-449K1 O-RING	HNBR	1	X	X
17	18100-094K1 O-RING	HNBR	1	X	X
18	186433 INSERT, SEAL SH8, TYPE 2, 1-1/2" MK IV	A276 TP 316 (316 SS)	3		
19	18100-055K1 O-RING	HNBR	7	X	X
20	186540 BODY VALVE SHUTTLE MK'IV, 1-1/2", CODE 62, 90 DEG	A276 TP 316 (316 SS)	1		
21	18100-105K1 O-RING	HNBR	1	X	X

SIZE DWG NO. **B** 29022 REV **A**
 SCALE 1:8 SolidWORKS SHEET 2 OF 2