



**"GL" CIRCULATING SLEEVE
SIZES 1.78 / 1.81 / 1.87**

The GMU "GL" Circulating Sleeve is a downhole flow control device mounted in the production tubing to provide communication between the tubing and casing annulus. It is opened by shifting an inner sleeve either up or down by standard wireline methods.

DESIGN FEATURES:

- * Features a nipple profile above and a packing bore above and below the communication ports.
- * Dependable, Simple, Quick
- * Ports can be closed without leaving any obstructions in the tubing once the shifting operation is completed
- * The Model "D-2" Shifting Tool is used to open (jarring up) or close (jarring down) the "GL" Circulating Sleeve.
- * All premium threads available.

MATERIAL SELECTION:

4140 P-110	9CH 80K MYS
4140 L-80	13CH 80K MYS (STD.)
17-4 PH HH SS	13CH 90K MYS
718 INCONNEL	13CH 95K MYS
316SS	13CH 100K MYS
410SS	

SIZE	SEAL BORE	PART NO.
1.78GL	1.781	1106-00-178-XXX
1.81GL	1.812	1106-00-181-XXX
1.87GL	1.875	1106-00-187-XXX

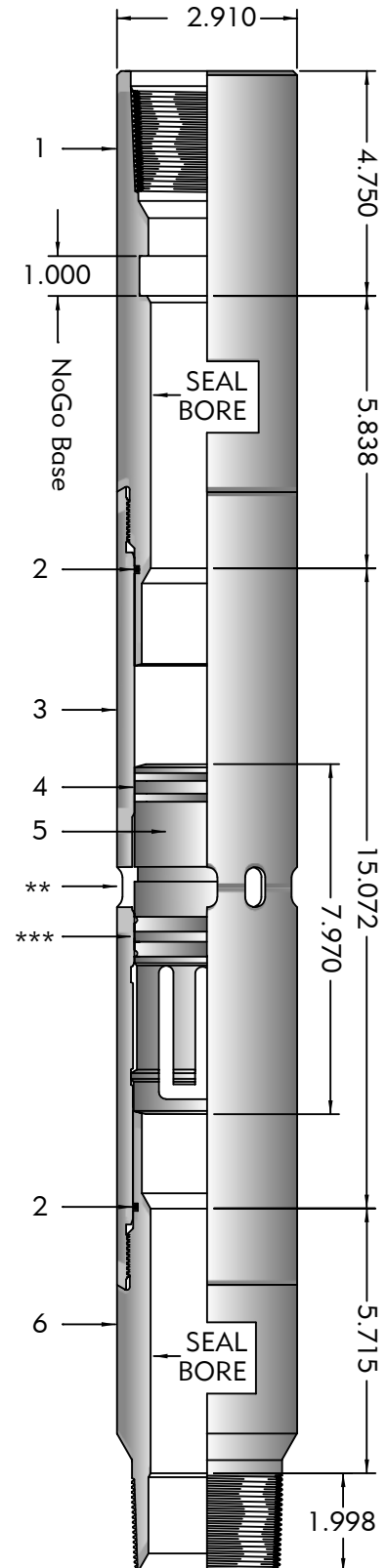
** Flow Ports / Area 2.838 sq. in.

*** Two Non-Replaceable Seals

PARTS LIST

ITEM	PART NAME	NO. REQ.	PART NO.
			Material or tubing Threads Not Specified
1	1.78 Top Sub	1	2000-00-178-XXX
1	1.81 Top Sub	1	2000-00-181-XXX
1	1.87 Top Sub	1	2000-00-187-XXX
2	O-Ring	2	OR-141-D90V
3	Middle Housing	1	2001-00-237-000
4	Loose Seals	2	2004-00-237-000
5	Closing Sleeve	1	2006-00-237-000
6	1.78 Bottom Sub	1	2003-00-178-XXX
6	1.81 Bottom Sub	1	2003-00-181-XXX
6	1.87 bottom Sub	1	2003-00-187-XXX

Note: Length of sleeve is as shown, varying with thread and bore size relationships.





**"GL" CIRCULATING SLEEVE
SIZES 2.25 / 2.31**

The GMU "GL" Circulating Sleeve is a downhole flow control device mounted in the production tubing to provide communication between the tubing and casing annulus. It is opened by shifting an inner sleeve either up or down by standard wireline methods.

DESIGN FEATURES:

- * Features a nipple profile above and a packing bore above and below the communication ports.
- * Dependable, Simple, Quick
- * Ports can be closed without leaving any obstructions in the tubing once the shifting operation is completed
- * The Model "D-2" Shifting Tool is used to open (jarring up) or close (jarring down) the "GL" Circulating Sleeve.
- * All premium threads available.

MATERIAL SELECTION:

4140 P-110	9CH 80K MYS
4140 L-80	13CH 80K MYS (STD.)
17-4 PH HH SS	13CH 90K MYS
718 INCONNEL	13CH 95K MYS
316SS	13CH 100K MYS
410SS	

SIZE	SEAL BORE	PART NO.
2.25GL	2.250	1106-00-225-XXX
2.31GL	2.313	1106-00-231-XXX

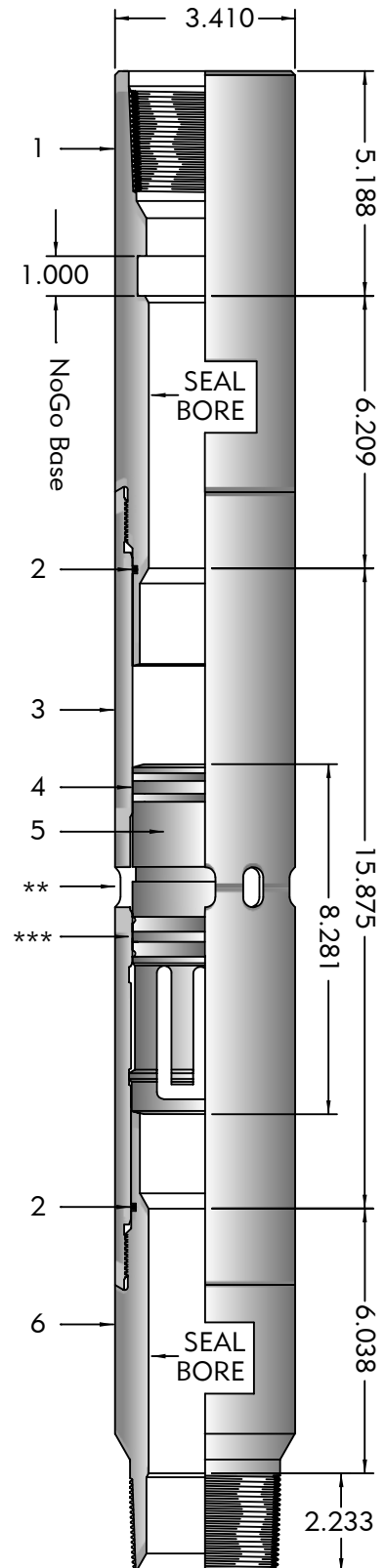
** Flow Ports / Area 4.137 sq. in.

*** Two Non-Replaceable Seals

PARTS LIST

ITEM	PART NAME	NO. REQ.	PART NO.
			Material or tubing Threads Not Specified
1	2.25 Top Sub	1	2000-00-225-XXX
1	2.31 Top Sub	1	2000-00-231-XXX
2	O-Ring	2	OR-149-D90V
3	Middle Housing	1	2001-00-287-000
4	Loose Seals	2	2004-00-287-000
5	Closing Sleeve	1	2006-00-287-000
6	2.25 Bottom Sub	1	2003-00-225-XXX
6	2.31 Bottom Sub	1	2003-00-231-XXX

Note: Length of sleeve is as shown, varying with thread and bore size relationships.





**"GL" CIRCULATING SLEEVE
SIZES 2.75 / 2.81**

The GMU "GL" Circulating Sleeve is a downhole flow control device mounted in the production tubing to provide communication between the tubing and casing annulus. It is opened by shifting the inner sleeve either up or down by standard wireline methods.

DESIGN FEATURES:

- * Features a nipple profile above and a packing bore above and below the communication ports.
- * Dependable, Simple, Quick
- * Ports can be closed without leaving any obstructions in the tubing once the shifting operation is completed
- * The Model "D-2" Shifting Tool is used to open (jarring up) or close (jarring down) the "GL" Circulating Sleeve.
- * All premium threads available.

MATERIAL SELECTION:

- | | |
|---------------|---------------------|
| 4140 P-110 | 9CH 80K MYS |
| 4140 L-80 | 13CH 80K MYS (STD.) |
| 17-4 PH HH SS | 13CH 90K MYS |
| 718 INCONNEL | 13CH 95K MYS |
| 316SS | 13CH 100K MYS |
| 410SS | |

SIZE	SEAL BORE	PART NO.
2.75GL	2.750	1106-00-275-XXX
2.81GL	2.812	1106-00-281-XXX

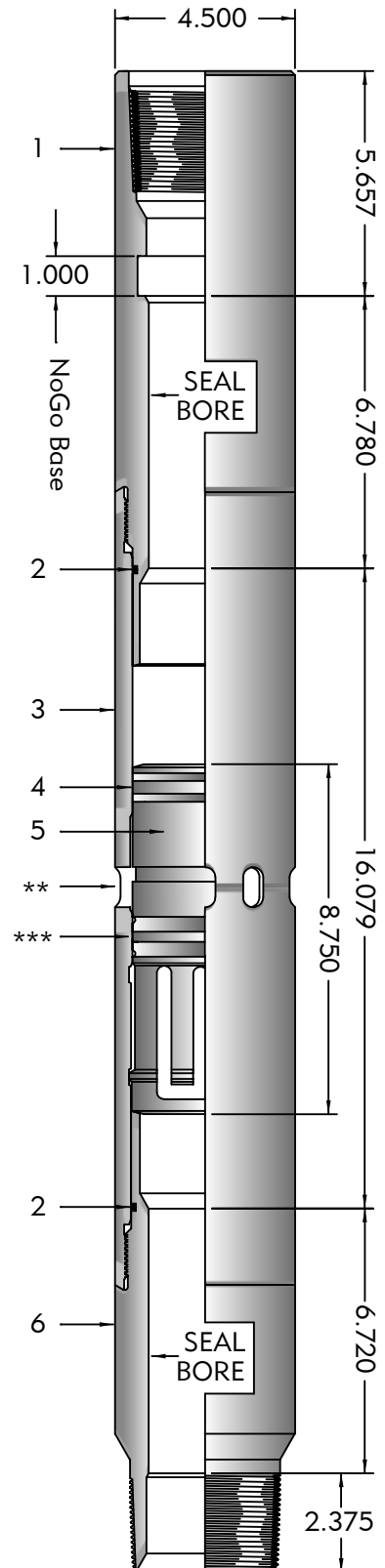
** Flow Ports / Area 6.106 sq. in.

*** Two Non-Replaceable Seals

PARTS LIST

ITEM	PART NAME	NO. REQ.	PART NO.
			Material or tubing Threads Not Specified
1	2.75 Top Sub	1	2000-00-275-XXX
1	2.81 Top Sub	1	2000-00-281-XXX
2	O-Ring	2	OR-237-D90V
3	Middle Housing	1	2001-00-350-000
4	Loose Seals	2	2004-00-350-000
5	Closing Sleeve	1	2006-00-350-000
6	2.75 Bottom Sub	1	2003-00-275-XXX
6	2.81 Bottom Sub	1	2003-00-281-XXX

Note: Length of sleeve is as shown, varying with thread and bore size relationships.





**"GL" CIRCULATING SLEEVE
SIZE 3.68**

The GMU "GL" Circulating Sleeve is a downhole flow control device mounted in the production tubing to provide communication between the tubing and casing annulus. It is opened by shifting an inner sleeve either up or down by standard wireline methods.

DESIGN FEATURES:

- * Features a nipple profile above and a packing bore above and below the communication ports.
- * Dependable, Simple, Quick
- * Ports can be closed without leaving any obstructions in the tubing once the shifting operation is completed
- * The Model "D-2" Shifting Tool is used to open (jarring up) or close (jarring down) the "GL" Circulating Sleeve.
- * All premium threads available.

MATERIAL SELECTION:

4140 P-110	9CH 80K MYS
4140 L-80	13CH 80K MYS (STD.)
17-4 PH HH SS	13CH 90K MYS
718 INCONNEL	13CH 95K MYS
316SS	13CH 100K MYS
410SS	

SIZE	SEAL BORE	PART NO.
3.68GL	3.688	1106-00-368-XXX

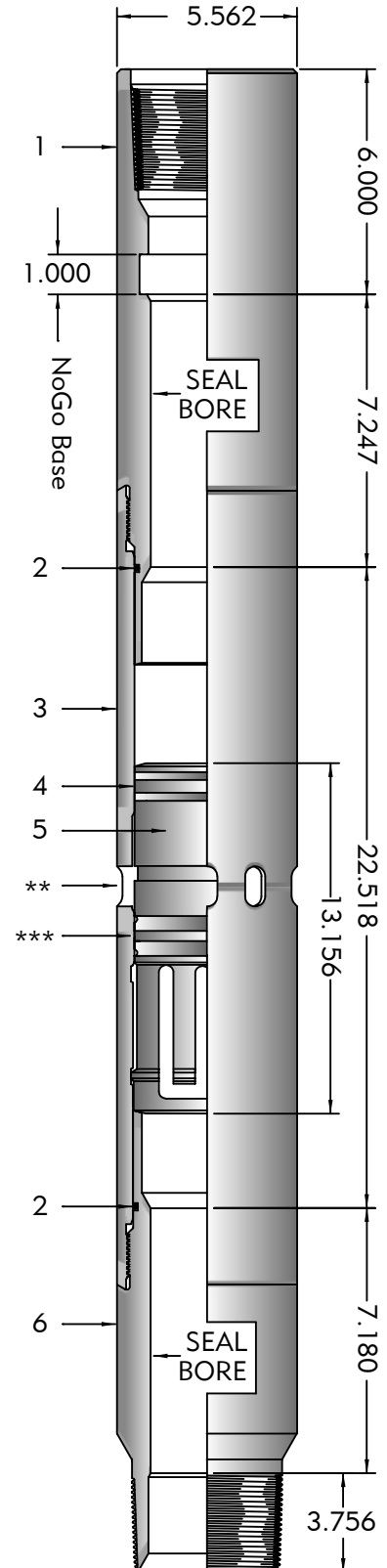
** Flow Ports / Area 10.708 sq. in.

*** Two Non-Replaceable Seals

PARTS LIST

ITEM	PART NAME	NO. REQ.	PART NO.
			Material or tubing Threads Not Specified
1	3.68 Top Sub	1	2000-00-368-XXX
2	O-Ring	2	OR-245-D90V
3	Middle Housing	1	2001-00-450-000
4	Loose Seals	2	2004-00-450-000
5	Closing Sleeve	1	2006-00-450-000
6	3.68 Bottom Sub	1	2003-00-368-XXX

Note: Length of sleeve is as shown, varying with thread and bore size relationships.





**"GL" CIRCULATING SLEEVE
SIZE 3.81**

The GMU "GL" Circulating Sleeve is a downhole flow control device mounted in the production tubing to provide communication between the tubing and casing annulus. It is opened by shifting an inner sleeve either up or down by standard wireline methods.

DESIGN FEATURES:

- * Features a nipple profile above and a packing bore above and below the communication ports.
- * Dependable, Simple, Quick
- * Ports can be closed without leaving any obstructions in the tubing once the shifting operation is completed
- * The Model "D-2" Shifting Tool is used to open (jarring up) or close (jarring down) the "GL" Circulating Sleeve.
- * All premium threads available.

MATERIAL SELECTION:

4140 P-110	9CH 80K MYS
4140 L-80	13CH 80K MYS (STD.)
17-4 PH HH SS	13CH 90K MYS
718 INCONNEL	13CH 95K MYS
316SS	13CH 100K MYS
410SS	

SIZE	SEAL BORE	PART NO.
3.81GL	3.812	1106-00-381-XXX

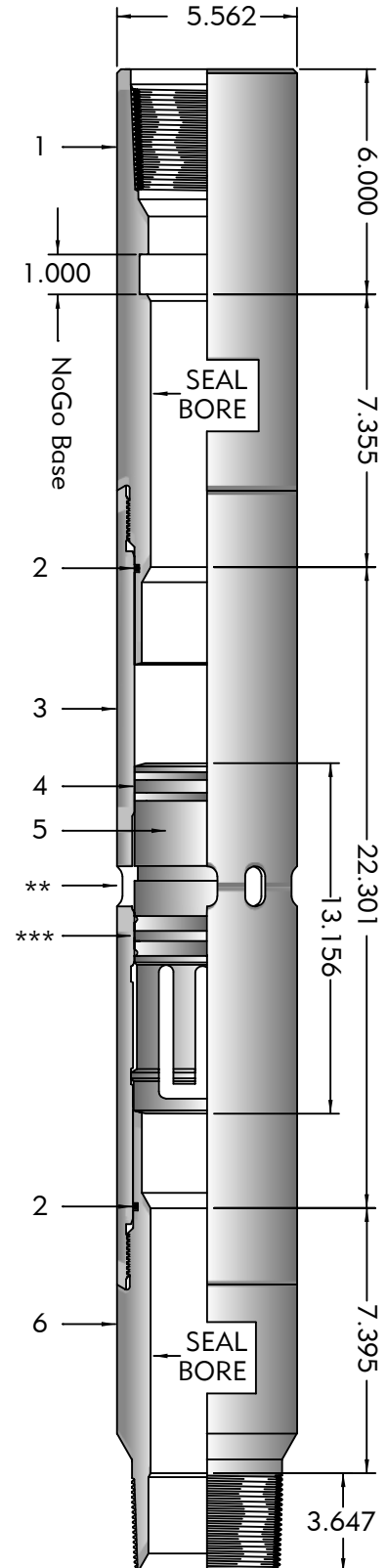
** Flow Ports / Area 10.708 sq. in.

*** Two Non-Replaceable Seals

PARTS LIST

ITEM	PART NAME	NO. REQ.	PART NO.
			Material or tubing Threads Not Specified
1	3.81 Top Sub	1	2000-00-381-XXX
2	O-Ring	2	OR-245-D90V
3	Middle Housing	1	2001-00-450-000
4	Loose Seals	2	2004-00-450-000
5	Closing Sleeve	1	2006-00-450-000
6	3.81 Bottom Sub	1	2003-00-381-XXX

Note: Length of sleeve is as shown, varying with thread and bore size relationships.





**"GL" SLIMHOLE CIRCULATING SLEEVE
SIZES 2.75 / 2.81**

The GMU "GL" Slimhole Circulating Sleeve is a downhole flow control device mounted in the production tubing to provide communication between the tubing and casing annulus. It is opened by shifting an inner sleeve either up or down by standard wireline methods.

DESIGN FEATURES:

- * Features a nipple profile above and a packing bore above and below the communication ports.
- * Dependable, Simple, Quick
- * Ports can be closed without leaving any obstructions in the tubing once the shifting operation is completed
- * The Model "D-2" Shifting Tool is used to open (jarring up) or close (jarring down) the "GL" Slimhole Circulating Sleeve.
- * All premium threads available.

MATERIAL SELECTION:

4140 P-110	9CH 80K MYS
4140 L-80	13CH 80K MYS (STD.)
17-4 PH HH SS	13CH 90K MYS
718 INCONNEL	13CH 95K MYS
316SS	13CH 100K MYS
410SS	

SIZE	SEAL BORE	PART NO.
2.75GL	2.750	1106-00-275-XXX
2.81GL	2.812	1106-00-281-XXX

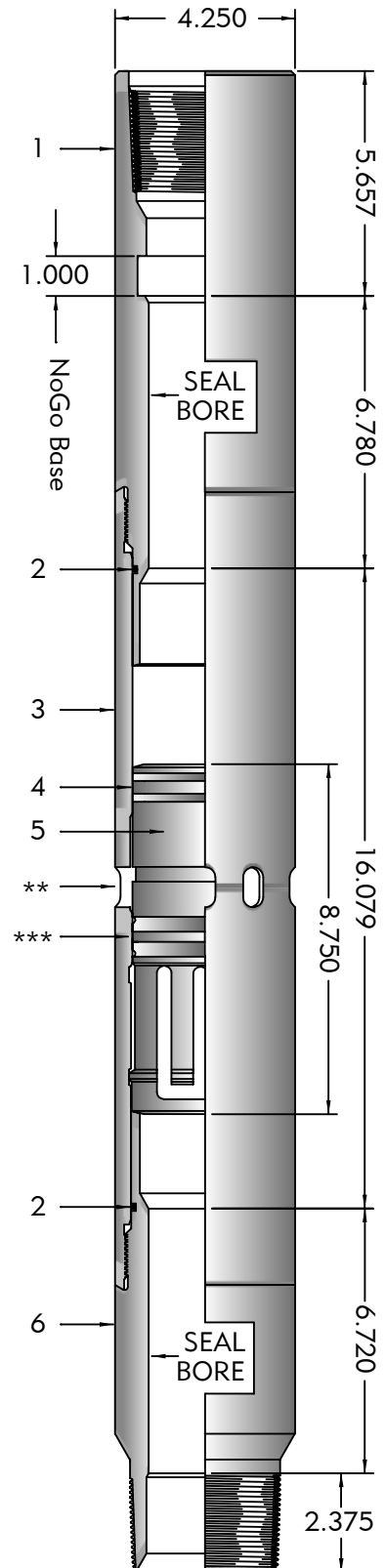
** Flow Ports / Area 6.106 sq. in.

*** Two Non-Replaceable Seals

PARTS LIST

ITEM	PART NAME	NO. REQ.	PART NO.
			Material or tubing Threads Not Specified
1	2.75 Top Sub	1	2000-00-275-XXX
1	2.81 Top Sub	1	2000-00-281-XXX
2	O-Ring	2	OR-237-D90V
3	Middle Housing	1	2001-00-350-000
4	Loose Seals	2	2004-00-350-000
5	Closing Sleeve	1	2006-00-350-000
6	2.75 Bottom Sub	1	2003-00-275-XXX
6	2.81 Bottom Sub	1	2003-00-281-XXX

Note: Length of sleeve is as shown, varying with thread and bore size relationships.





1.87" GXA CIRCULATING SLEEVE W/ 2-3/8" EUE Pin x Pin

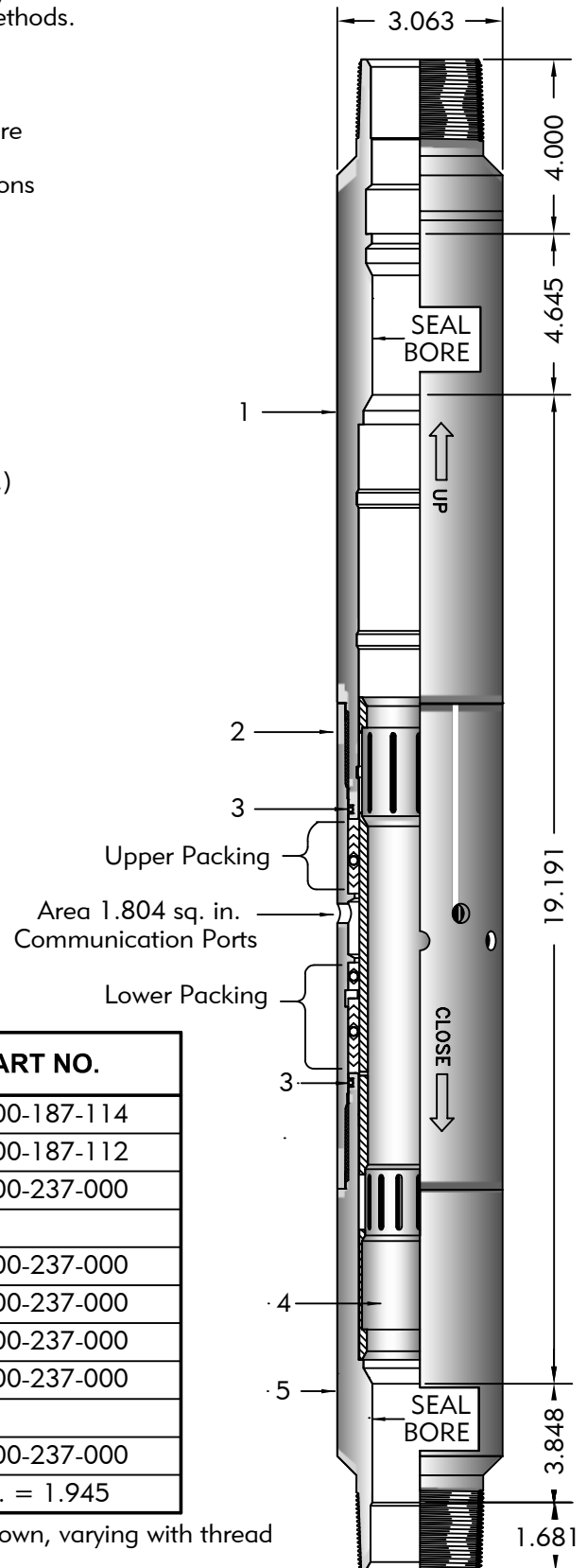
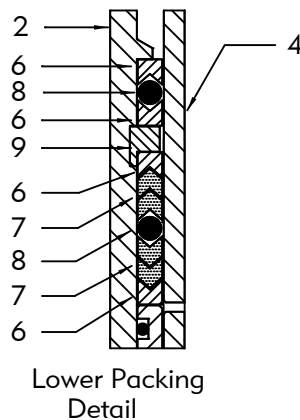
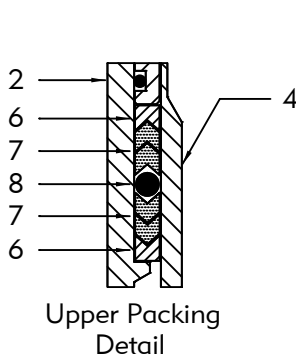
The "GXA" Circulating Sleeve provides a convenient way to establish or shut off communication between the tubing and the annulus. Any number of these sleeves may be run in a tubing string, and any or all of them may be opened or closed in one run by standard wireline methods.

DESIGN FEATURES:

- * Features a nipple profile above and a packing bore above and below the communication ports.
- * Ports can be closed without leaving any obstructions in the tubing once the shifting operation is completed.
- * The Model "B" Shifting Tool is used to open (jarring up) or close (jarring down) the "GXA" Circulating sleeve.
- * All premium threads available.

MATERIAL SELECTION:

4140 P-110	9CH 80K MYS
4140 L-80	13CH 80K MYS (STD.)
17-4 PH HH 1150SS	13CH 90K MYS
718 INCONNEL	13CH 95K MYS
316SS	13CH 100K MYS
410SS	



PARTS LIST

ITEM	PART NAME	NO. REQ.	PART NO.
--	"GXA" Circulating Sleeve	--	1107-00-187-114
1	Top Sub	1	2010-00-187-112
2	Middle Sub	1	2012-00-237-000
**3	O-Ring	2	#229
4	Inner Sleeve	1	2011-00-237-000
5	Bottom Sub	1	2013-00-237-000
6	Female Adapter, Steel	6	2014-00-237-000
**7	V-Packing	8	2015-00-237-000
**8	O-Ring	3	#331
9	Split Ring Segments	4	2020-00-237-000
Seal Bore = 1.875		Inner Sleeve I.D. = 1.945	

** Recommended Spare Parts

Note: Length of sleeve is as shown, varying with thread and bore size relationships.



2.31" GXA CIRCULATING SLEEVE W/ 2-7/8" EUE Pin x Pin

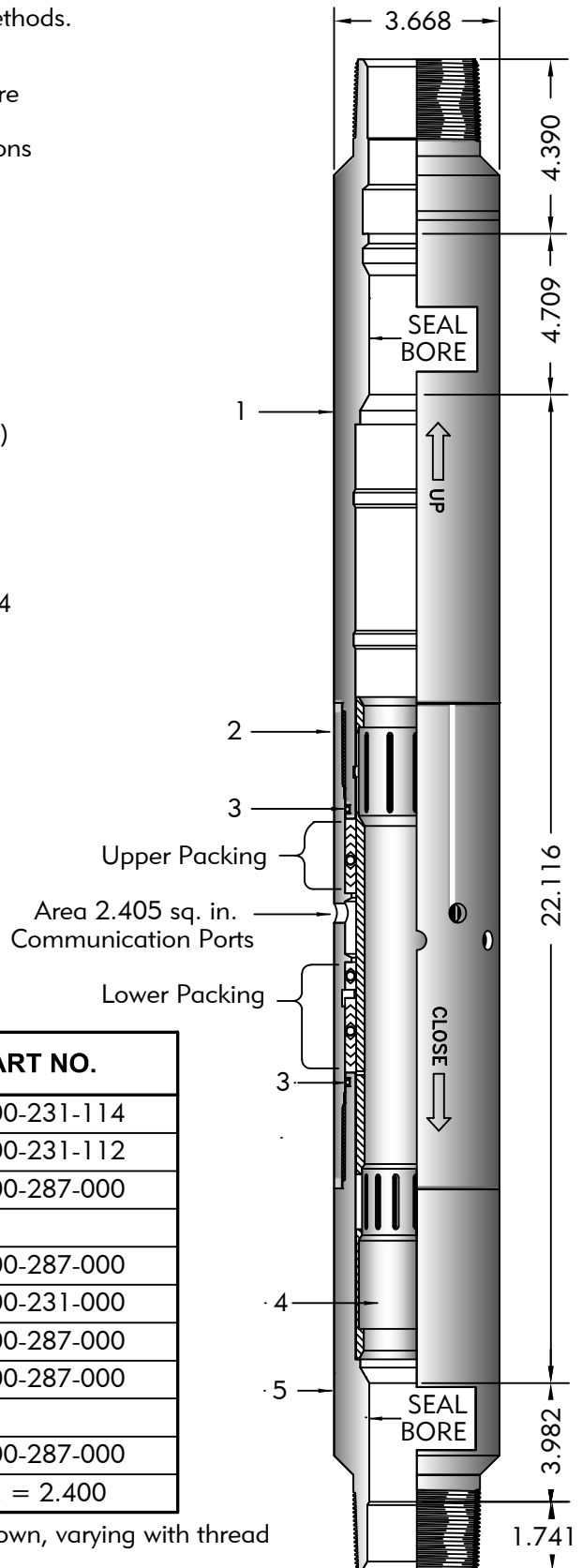
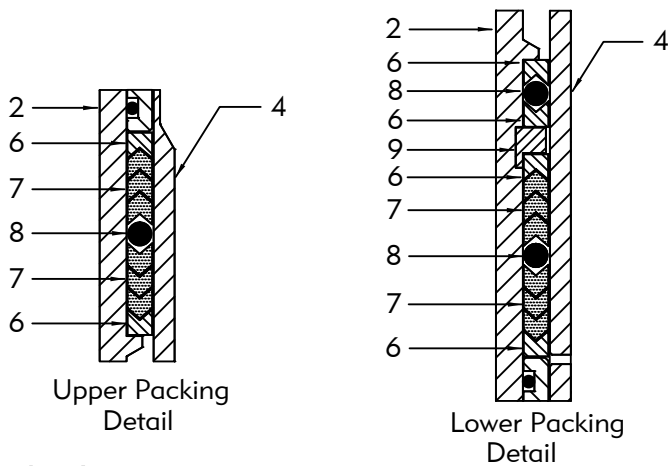
The "GXA" Circulating Sleeve provides a convenient way to establish or shut off communication between the tubing and the annulus. Any number of these sleeves may be run in a tubing string, and any or all of them may be opened or closed in one run by standard wireline methods.

DESIGN FEATURES:

- * Features a nipple profile above and a packing bore above and below the communication ports.
- * Ports can be closed without leaving any obstructions in the tubing once the shifting operation is completed.
- * The Model "B" Shifting Tool is used to open (jarring up) or close (jarring down) the "GXA" Circulating sleeve.
- * All premium threads available.

MATERIAL SELECTION:

4140 P-110	9CH 80K MYS
4140 L-80	13CH 80K MYS (STD.)
17-4 PH HH 1150SS	13CH 90K MYS
718 INCONNEL	13CH 95K MYS
316SS	13CH 100K MYS
410SS	



PARTS LIST

ITEM	PART NAME	NO. REQ.	PART NO.
--	"GXA" Circulating Sleeve	--	1107-00-231-114
1	Top Sub	1	2010-00-231-112
2	Middle Sub	1	2012-00-287-000
**3	O-Ring	2	#233
4	Inner Sleeve	1	2011-00-287-000
5	Bottom Sub	1	2013-00-231-000
6	Female Adapter, Steel	6	2014-00-287-000
**7	V-Packing	12	2015-00-287-000
**8	O-Ring	3	#441
9	Split Ring Segments	4	2020-00-287-000
Seal Bore = 2.313		Inner Sleeve I.D. = 2.400	

** Recommended Spare Parts

Note: Length of sleeve is as shown, varying with thread and bore size relationships.



2.75" GXA CIRCULATING SLEEVE W/ 3-1/2" EUE Pin x Pin

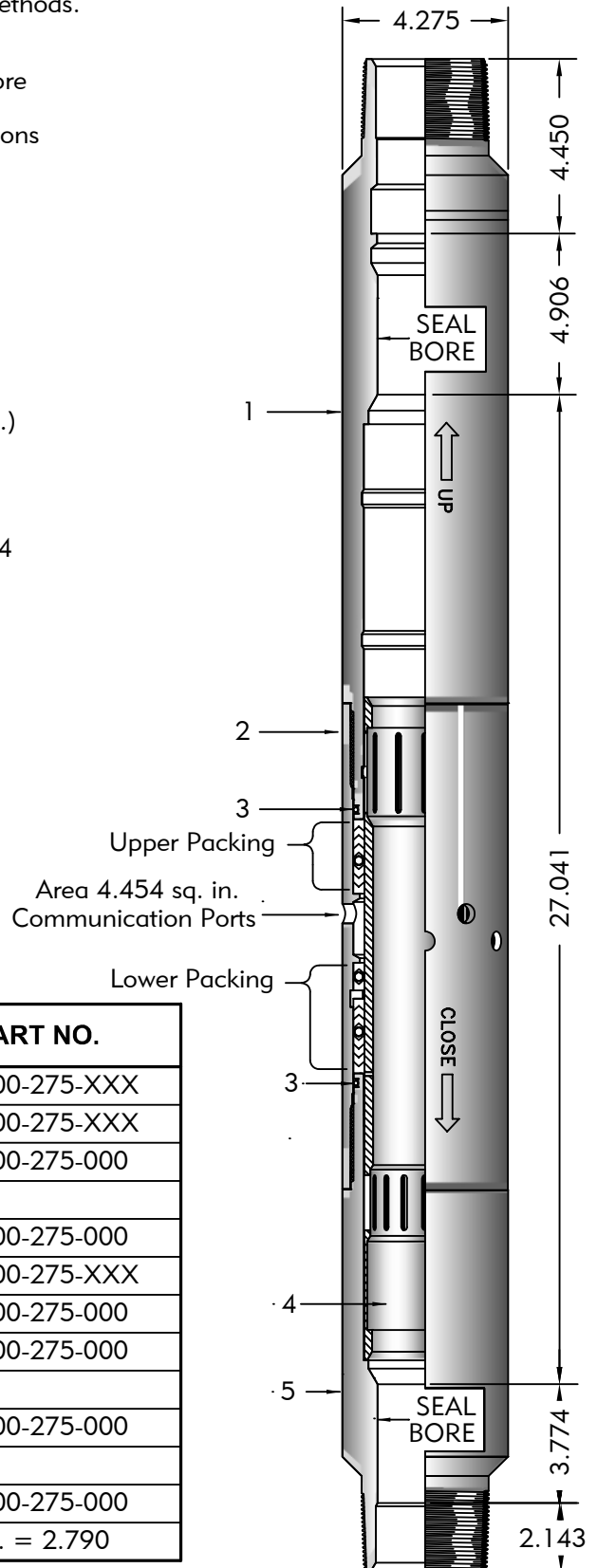
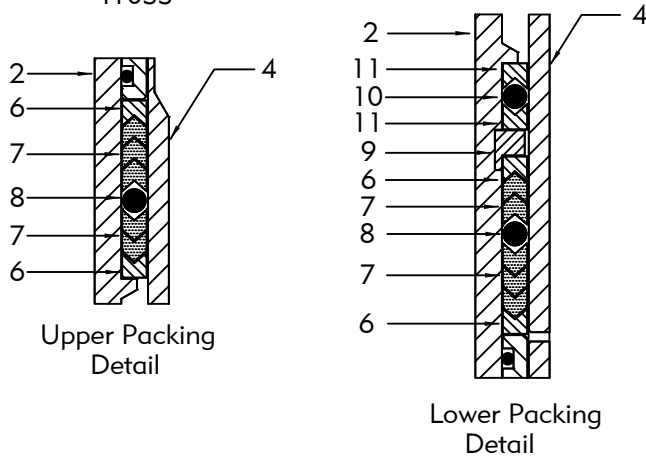
The "GXA" Circulating Sleeve provides a convenient way to establish or shut off communication between the tubing and the annulus. Any number of these sleeves may be run in a tubing string, and any or all of them may be opened or closed in one run by standard wireline methods.

DESIGN FEATURES:

- * Features a nipple profile above and a packing bore above and below the communication ports.
- * Ports can be closed without leaving any obstructions in the tubing once the shifting operation is completed.
- * The Model "B" Shifting Tool is used to open (jarring up) or close (jarring down) the "GXA" Circulating sleeve.
- * All premium threads available.

MATERIAL SELECTION:

4140 P-110	9CH 80K MYS
4140 L-80	13CH 80K MYS (STD.)
17-4 PH HH 1150SS	13CH 90K MYS
718 INCONNEL	13CH 95K MYS
316SS	13CH 100K MYS
410SS	



PARTS LIST

ITEM	PART NAME	NO. REQ.	PART NO.
--	"GXA" Circulating Sleeve	--	1107-00-275-XXX
1	Top Sub	1	2010-00-275-XXX
2	Middle Sub	1	2012-00-275-000
**3	O-Ring	2	#237
4	Inner Sleeve	1	2011-00-275-000
5	Bottom Sub	1	2013-00-275-XXX
6	Female Adapter, Steel	4	2014-00-275-000
**7	V-Packing	10	2015-00-275-000
**8	O-Ring	2	#414
9	Split Ring Segments	6	2020-00-275-000
**10	O-Ring	1	#338
**11	Female Adapter, Steel	2	2014-00-275-000
Seal Bore = 2.750		Inner Sleeve I.D. = 2.790	

** Recommended Spare Parts

Note: Length of sleeve is as shown, varying with thread and bore size relationships.



2.81" GXA CIRCULATING SLEEVE W/ 3-1/2" EUE Pin x Pin

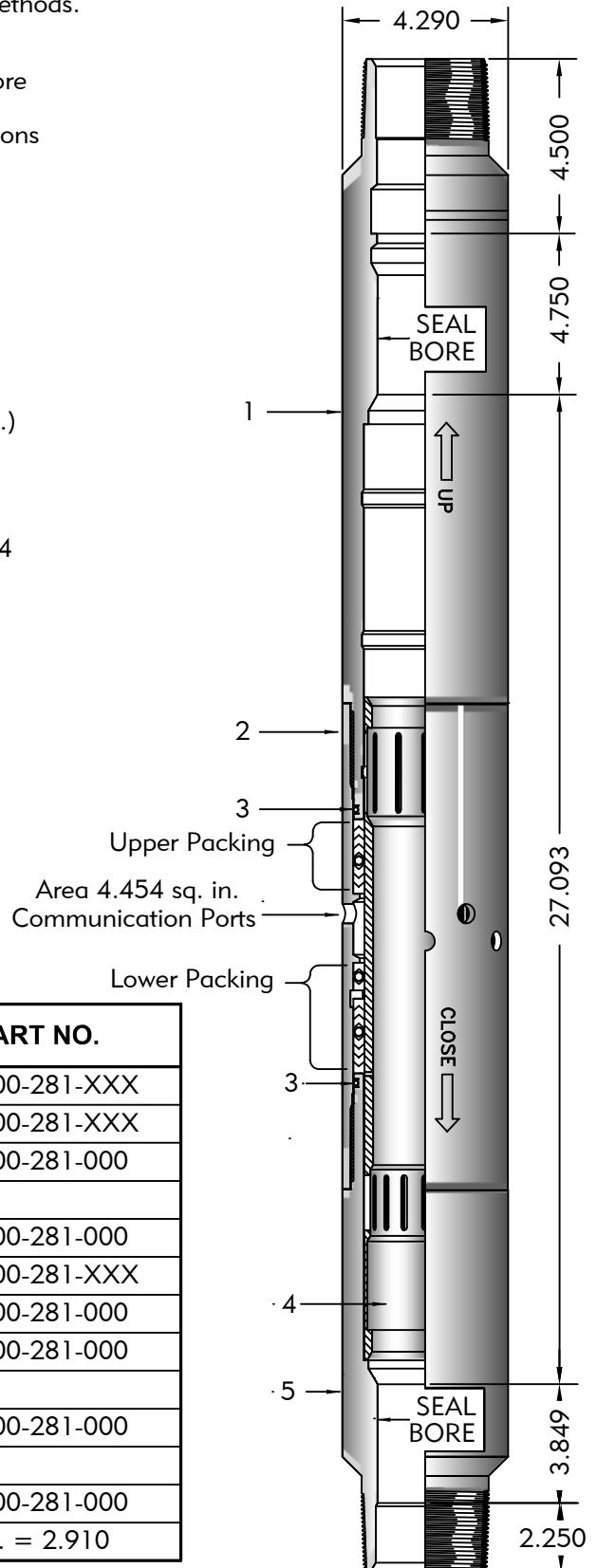
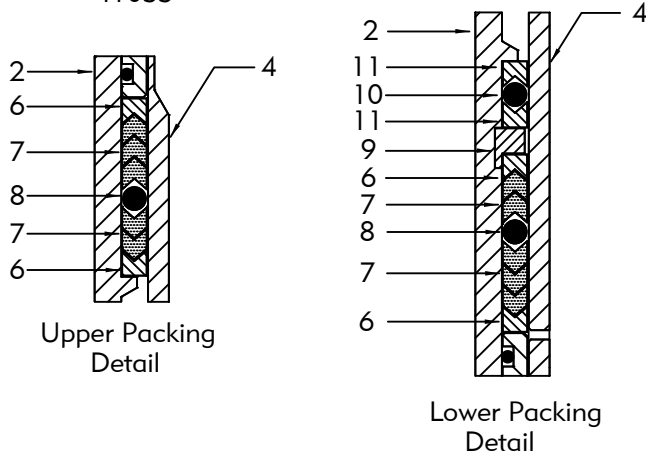
The "GXA" Circulating Sleeve provides a convenient way to establish or shut off communication between the tubing and the annulus. Any number of these sleeves may be run in a tubing string, and any or all of them may be opened or closed in one run by standard wireline methods.

DESIGN FEATURES:

- * Features a nipple profile above and a packing bore above and below the communication ports.
- * Ports can be closed without leaving any obstructions in the tubing once the shifting operation is completed.
- * The Model "B" Shifting Tool is used to open (jarring up) or close (jarring down) the "GXA" Circulating sleeve.
- * All premium threads available.

MATERIAL SELECTION:

4140 P-110	9CH 80K MYS
4140 L-80	13CH 80K MYS (STD.)
17-4 PH HH 1150SS	13CH 90K MYS
718 INCONNEL	13CH 95K MYS
316SS	13CH 100K MYS
410SS	



PARTS LIST

ITEM	PART NAME	NO. REQ.	PART NO.
--	"GXA" Circulating Sleeve	--	1107-00-281-XXX
1	Top Sub	1	2010-00-281-XXX
2	Middle Sub	1	2012-00-281-000
**3	O-Ring	2	#238
4	Inner Sleeve	1	2011-00-281-000
5	Bottom Sub	1	2013-00-281-XXX
6	Female Adapter, Steel	4	2014-00-281-000
**7	V-Packing	10	2015-00-281-000
**8	O-Ring	2	#415
9	Split Ring Segments	6	2020-00-281-000
**10	O-Ring	1	#339
**11	Female Adapter, Steel	2	2014-00-281-000
Seal Bore = 2.813		Inner Sleeve I.D. = 2.910	

** Recommended Spare Parts

Note: Length of sleeve is as shown, varying with thread and bore size relationships.



1.87" GXO CIRCULATING SLEEVE W/ 2-3/8" EUE Pin x Pin

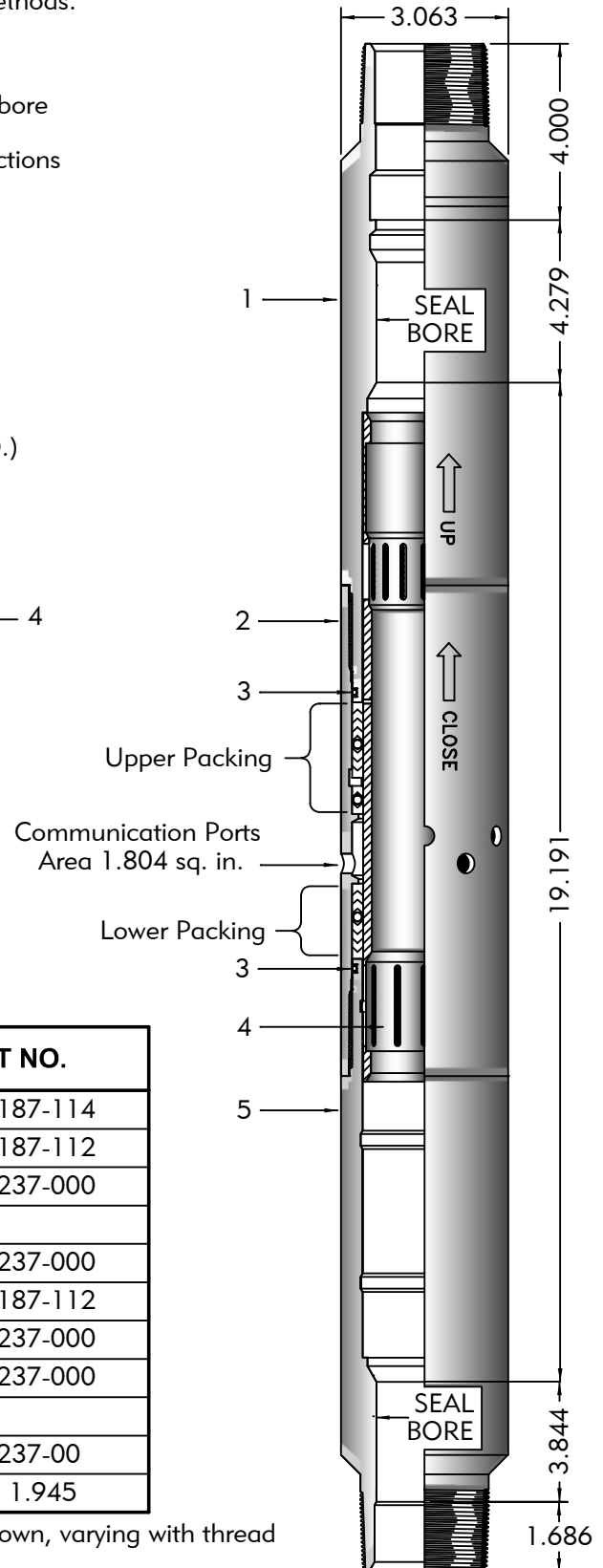
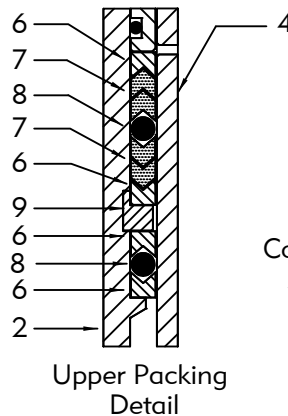
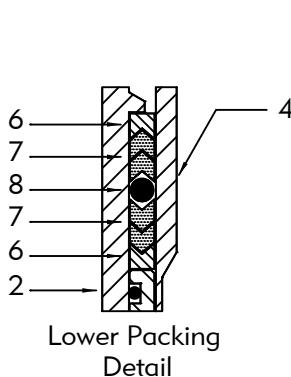
The "GXO" Circulating Sleeve provides a convenient way to establish or shut off communication between the tubing and the annulus. Any number of these sleeves may be run in a tubing string, and any or all of them may be opened or closed in one run by standard wireline methods.

DESIGN FEATURES:

- * Features a nipple profile above and a packing bore above and below the communication ports.
- * Ports can be closed without leaving any obstructions in the tubing once the shifting operation is completed.
- * The Model "B" Shifting Tool is used to open (jarring down) or close (jarring up) the "GXO" Circulating sleeve.
- * All premium threads available.

MATERIAL SELECTION:

4140 P-110	9CH 80K MYS
4140 L-80	13CH 80K MYS (STD.)
17-4 PH HH 1150SS	13CH 90K MYS
718 INCONNEL	13CH 95K MYS
316SS	13CH 100K MYS
410SS	



PARTS LIST

ITEM	PART NAME	NO. REQ.	PART NO.
--	"GXO" Circulating Sleeve	--	1108-00-187-114
1	Top Sub	1	2021-00-187-112
2	Middle Sub	1	2012-00-237-000
**3	O-Ring	2	#229
4	Inner Sleeve	1	2011-00-237-000
5	Bottom Sub	1	2026-00-187-112
6	Female Adapter, Steel	6	2014-00-237-000
**7	V-Packing	8	2015-00-237-000
**8	O-Ring	3	#331
9	Split Ring Segments	4	2020-00-237-00
Seal Bore = 1.875		Inner Sleeve I.D. = 1.945	

** Recommended Spare Parts

Note: Length of sleeve is as shown, varying with thread and bore size relationships.



2.31" GXO CIRCULATING SLEEVE W/ 2-7/8" EUE Pin x Pin

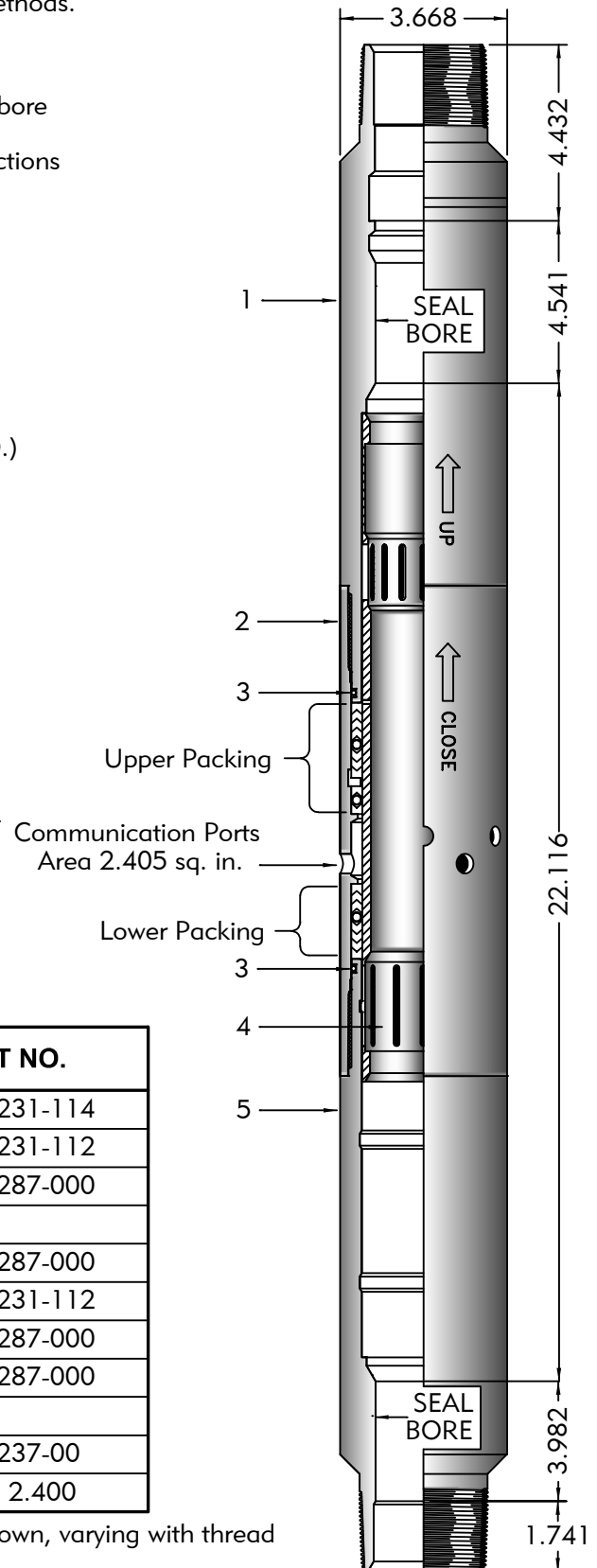
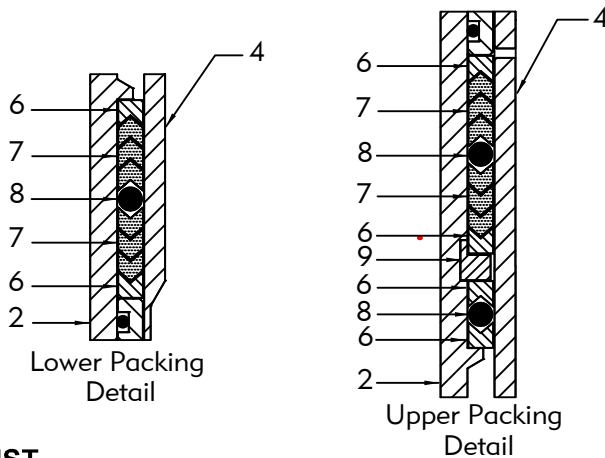
The "GXO" Circulating Sleeve provides a convenient way to establish or shut off communication between the tubing and the annulus. Any number of these sleeves may be run in a tubing string, and any or all of them may be opened or closed in one run by standard wireline methods.

DESIGN FEATURES:

- * Features a nipple profile above and a packing bore above and below the communication ports.
- * Ports can be closed without leaving any obstructions in the tubing once the shifting operation is completed.
- * The Model "B" Shifting Tool is used to open (jarring down) or close (jarring up) the "GXO" Circulating sleeve.
- * All premium threads available.

MATERIAL SELECTION:

4140 P-110	9CH 80K MYS
4140 L-80	13CH 80K MYS (STD.)
17-4 PH HH 1150SS	13CH 90K MYS
718 INCONNEL	13CH 95K MYS
316SS	13CH 100K MYS
410SS	



PARTS LIST

ITEM	PART NAME	NO. REQ.	PART NO.
--	"GXO" Circulating Sleeve	--	1108-00-231-114
1	Top Sub	1	2021-00-231-112
2	Middle Sub	1	2012-00-287-000
**3	O-Ring	2	#223
4	Inner Sleeve	1	2011-00-287-000
5	Bottom Sub	1	2026-00-231-112
6	Female Adapter, Steel	6	2014-00-287-000
**7	V-Packing	12	2015-00-287-000
**8	O-Ring	3	#411
9	Split Ring Segments	4	2020-00-237-00
Seal Bore = 2.313		Inner Sleeve I.D. = 2.400	

** Recommended Spare Parts

Note: Length of sleeve is as shown, varying with thread and bore size relationships.

2.75" GXO CIRCULATING SLEEVE W/ 3-1/2" EUE Pin x Pin



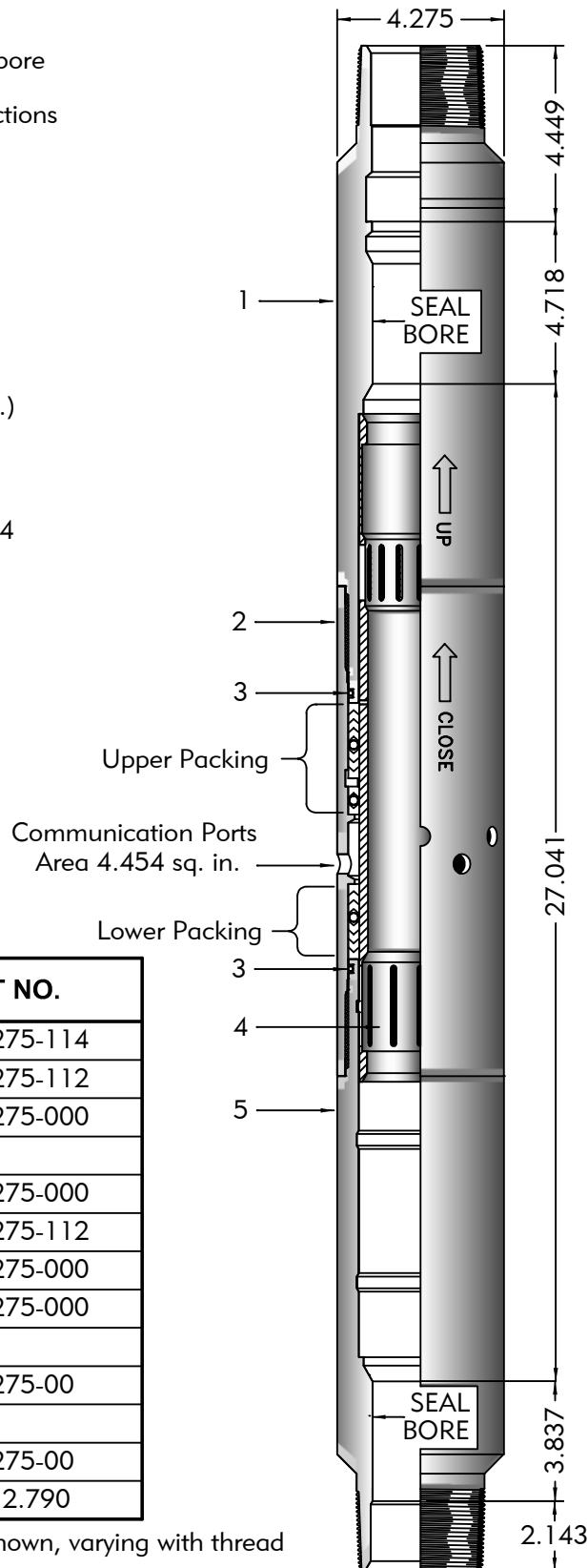
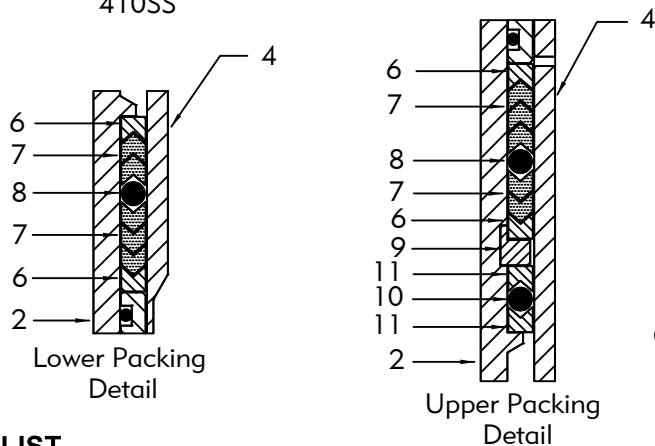
The "GXO" Circulating Sleeve provides a convenient way to establish or shut off communication between the tubing and the annulus. Any number of these sleeves may be run in a tubing string, and any or all of them may be opened or closed in one run by standard wireline methods.

DESIGN FEATURES:

- * Features a nipple profile above and a packing bore above and below the communication ports.
- * Ports can be closed without leaving any obstructions in the tubing once the shifting operation is completed.
- * The Model "B" Shifting Tool is used to open (jarring down) or close (jarring up) the "GXO" Circulating sleeve.
- * All premium threads available.

MATERIAL SELECTION:

4140 P-110	9CH 80K MYS
4140 L-80	13CH 80K MYS (STD.)
17-4 PH HH 1150SS	13CH 90K MYS
718 INCONNEL	13CH 95K MYS
316SS	13CH 100K MYS
410SS	



PARTS LIST

ITEM	PART NAME	NO. REQ.	PART NO.
--	"GXO" Circulating Sleeve	--	1108-00-275-114
1	Top Sub	1	2021-00-275-112
2	Middle Sub	1	2012-00-275-000
**3	O-Ring	2	#237
4	Inner Sleeve	1	2011-00-275-000
5	Bottom Sub	1	2026-00-275-112
6	Female Adapter, Steel	4	2014-00-275-000
**7	V-Packing	10	2015-00-275-000
**8	O-Ring	2	#414
9	Split Ring Segments	6	2020-00-275-00
**10	O-Ring	1	#338
**11	Female Adapter, Steel	2	2020-00-275-00
Seal Bore = 2.750		Inner Sleeve I.D. = 2.790	

** Recommended Spare Parts

Note: Length of sleeve is as shown, varying with thread and bore size relationships.

2.81" GXO CIRCULATING SLEEVE W/ 3-1/2" EUE Pin x Pin



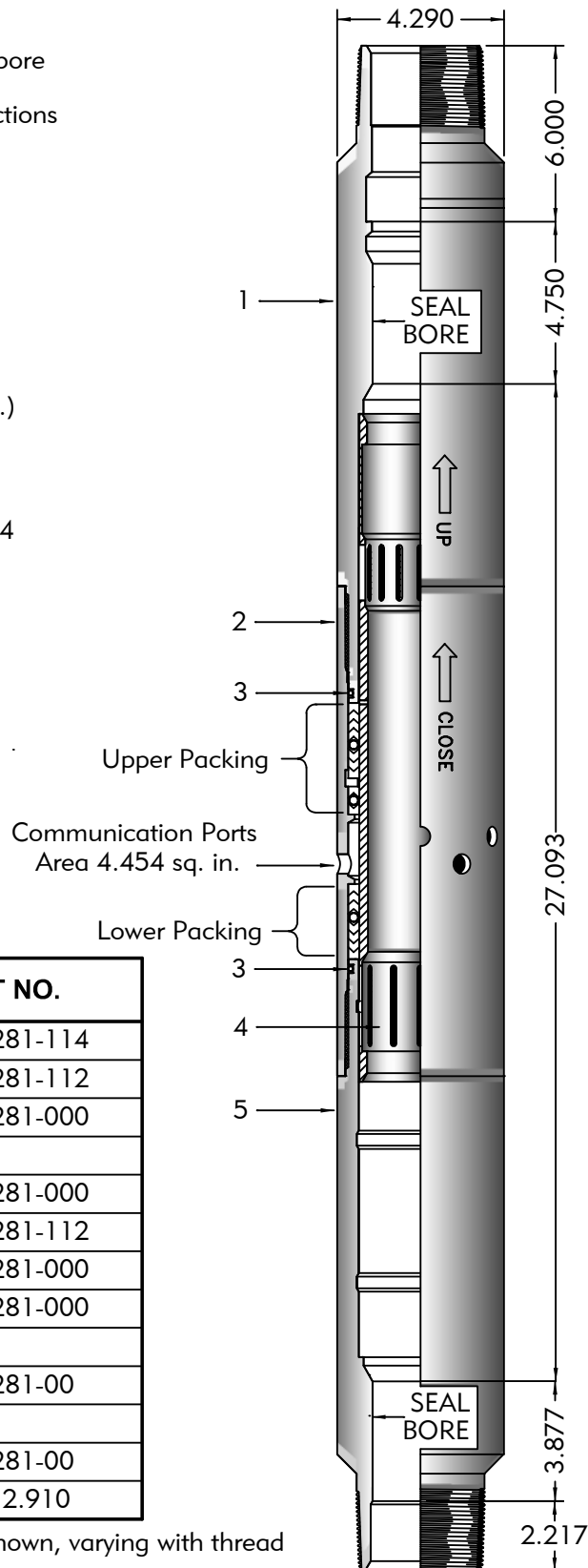
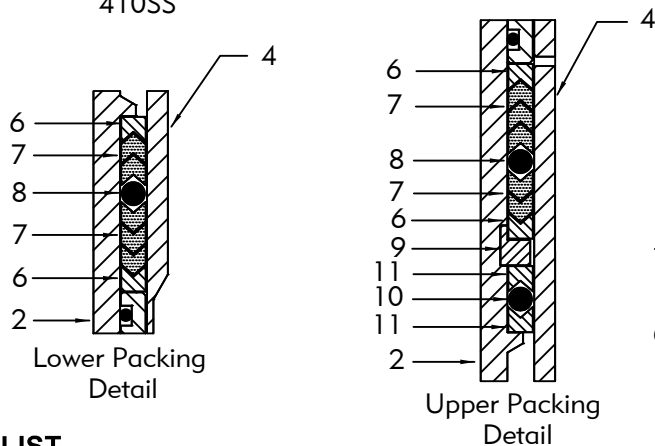
The "GXO" Circulating Sleeve provides a convenient way to establish or shut off communication between the tubing and the annulus. Any number of these sleeves may be run in a tubing string, and any or all of them may be opened or closed in one run by standard wireline methods.

DESIGN FEATURES:

- * Features a nipple profile above and a packing bore above and below the communication ports.
- * Ports can be closed without leaving any obstructions in the tubing once the shifting operation is completed.
- * The Model "B" Shifting Tool is used to open (jarring down) or close (jarring up) the "GXO" Circulating sleeve.
- * All premium threads available.

MATERIAL SELECTION:

4140 P-110	9CH 80K MYS
4140 L-80	13CH 80K MYS (STD.)
17-4 PH HH 1150SS	13CH 90K MYS
718 INCONNEL	13CH 95K MYS
316SS	13CH 100K MYS
410SS	



PARTS LIST

ITEM	PART NAME	NO. REQ.	PART NO.
--	"GXO" Circulating Sleeve	--	1108-00-281-114
1	Top Sub	1	2021-00-281-112
2	Middle Sub	1	2012-00-281-000
**3	O-Ring	2	#238
4	Inner Sleeve	1	2011-00-281-000
5	Bottom Sub	1	2026-00-281-112
6	Female Adapter, Steel	4	2014-00-281-000
**7	V-Packing	10	2015-00-281-000
**8	O-Ring	2	#415
9	Split Ring Segments	6	2020-00-281-00
**10	O-Ring	1	#339
**11	Female Adapter, Steel	2	2020-00-281-00
Seal Bore = 2.813		Inner Sleeve I.D. = 2.910	

** Recommended Spare Parts

Note: Length of sleeve is as shown, varying with thread and bore size relationships.

1.87" GXD CIRCULATING SLEEVE W/ 2-3/8" EUE Pin x Pin

The "GXD" Circulating Sleeve provides a convenient way to establish or shut off communication between the tubing and the annulus. Any number of these sleeves may be run in a tubing string, and any or all of them may be opened or closed in one run by standard wireline methods.

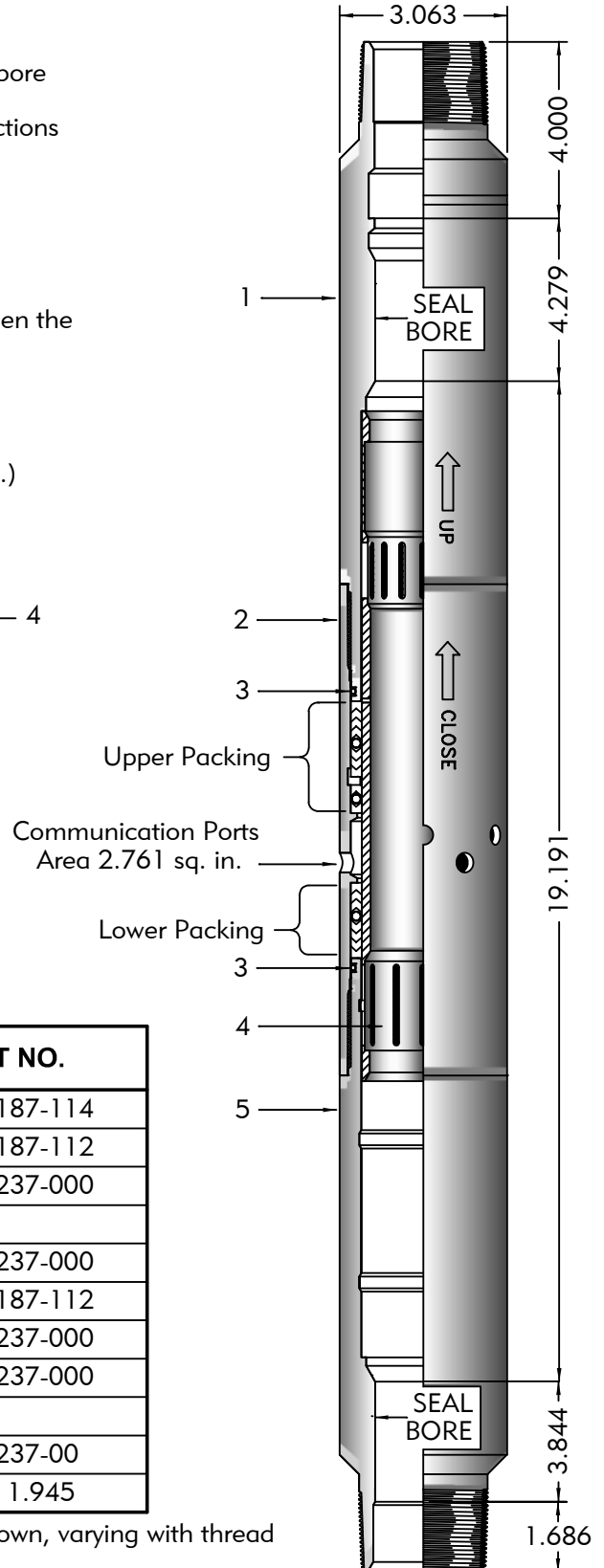
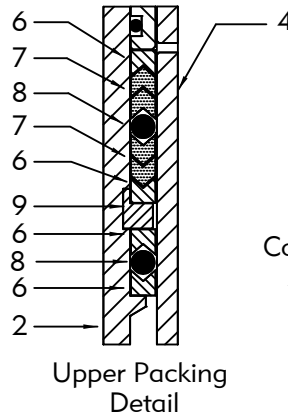
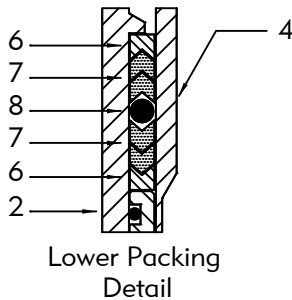


DESIGN FEATURES:

- * Features a nipple profile above and a packing bore above and below the communication ports.
- * Ports can be closed without leaving any obstructions in the tubing once the shifting operation is completed.
- * The Model "B" Shifting Tool is used to open (jarring down) or close (jarring up) the "GXD" Circulating sleeve.
- * All premium threads available.
- * The "GXD" Sleeve has a larger flow area between the tubing and the annulus.

MATERIAL SELECTION:

- | | |
|-------------------|---------------------|
| 4140 P-110 | 9CH 80K MYS |
| 4140 L-80 | 13CH 80K MYS (STD.) |
| 17-4 PH HH 1150SS | 13CH 90K MYS |
| 718 INCONNEL | 13CH 95K MYS |
| 316SS | 13CH 100K MYS |
| 410SS | |



PARTS LIST

ITEM	PART NAME	NO. REQ.	PART NO.
--	"GXD" Circulating Sleeve	--	1109-00-187-114
1	Top Sub	1	2021-00-187-112
2	Middle Sub	1	2027-00-237-000
**3	O-Ring	2	#229
4	Inner Sleeve	1	2032-00-237-000
5	Bottom Sub	1	2026-00-187-112
6	Female Adapter, Steel	6	2014-00-237-000
**7	V-Packing	8	2015-00-237-000
**8	O-Ring	3	#331
9	Split Ring Segments	4	2020-00-237-00
Seal Bore = 1.875		Inner Sleeve I.D. = 1.945	

** Recommended Spare Parts

Note: Length of sleeve is as shown, varying with thread and bore size relationships.

2.31" GXD CIRCULATING SLEEVE W/ 2-7/8" EUE Pin x Pin



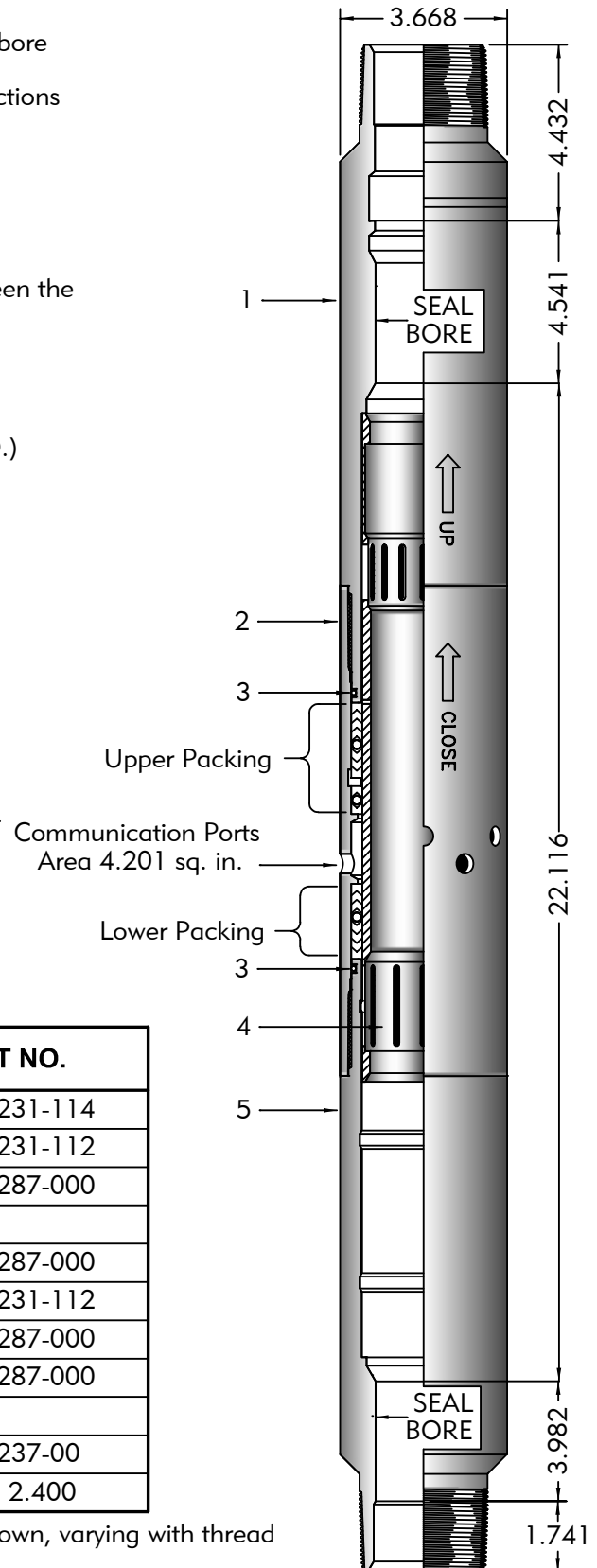
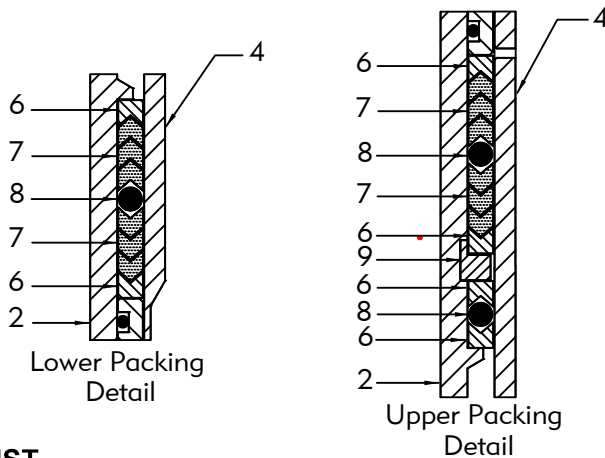
The "GXD" Circulating Sleeve provides a convenient way to establish or shut off communication between the tubing and the annulus. Any number of these sleeves may be run in a tubing string, and any or all of them may be opened or closed in one run by standard wireline methods.

DESIGN FEATURES:

- * Features a nipple profile above and a packing bore above and below the communication ports.
- * Ports can be closed without leaving any obstructions in the tubing once the shifting operation is completed.
- * The Model "B" Shifting Tool is used to open (jarring down) or close (jarring up) the "GXD" Circulating sleeve.
- * All premium threads available.
- * The "GXD" Sleeve has a larger flow area between the tubing and the annulus.

MATERIAL SELECTION:

4140 P-110	9CH 80K MYS
4140 L-80	13CH 80K MYS (STD.)
17-4 PH HH 1150SS	13CH 90K MYS
718 INCONNEL	13CH 95K MYS
316SS	13CH 100K MYS
410SS	



PARTS LIST

ITEM	PART NAME	NO. REQ.	PART NO.
--	"GXD" Circulating Sleeve	--	1109-00-231-114
1	Top Sub	1	2021-00-231-112
2	Middle Sub	1	2027-00-287-000
**3	O-Ring	2	#223
4	Inner Sleeve	1	2032-00-287-000
5	Bottom Sub	1	2026-00-231-112
6	Female Adapter, Steel	6	2014-00-287-000
**7	V-Packing	12	2015-00-287-000
**8	O-Ring	3	#411
9	Split Ring Segments	4	2020-00-237-00
Seal Bore = 2.313		Inner Sleeve I.D. = 2.400	

** Recommended Spare Parts

Note: Length of sleeve is as shown, varying with thread and bore size relationships.



2.75" GXD CIRCULATING SLEEVE W/ 3-1/2" EUE Pin x Pin

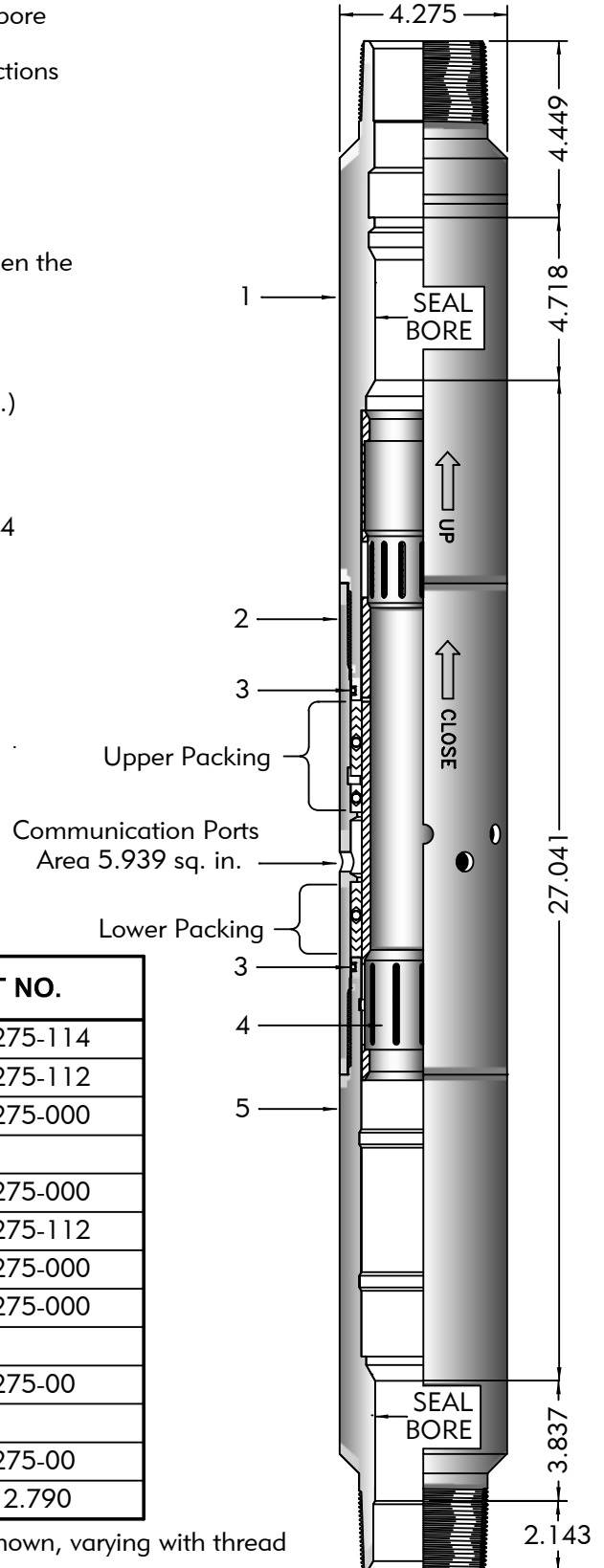
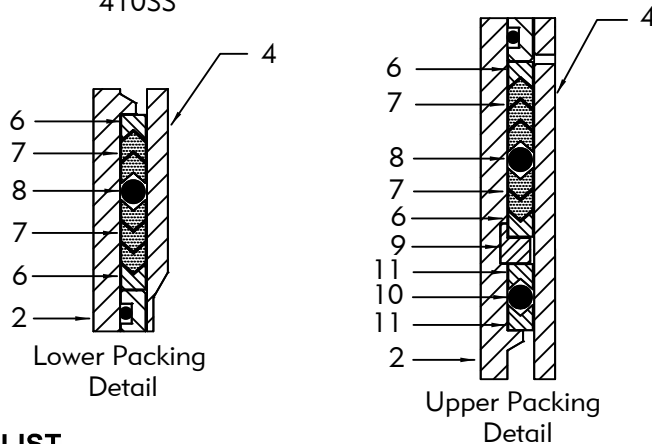
The "GXD" Circulating Sleeve provides a convenient way to establish or shut off communication between the tubing and the annulus. Any number of these sleeves may be run in a tubing string, and any or all of them may be opened or closed in one run by standard wireline methods.

DESIGN FEATURES:

- * Features a nipple profile above and a packing bore above and below the communication ports.
- * Ports can be closed without leaving any obstructions in the tubing once the shifting operation is completed.
- * The Model "B" Shifting Tool is used to open (jarring down) or close (jarring up) the "GXD" Circulating sleeve.
- * All premium threads available.
- * The "GXD" Sleeve has a larger flow area between the tubing and the annulus.

MATERIAL SELECTION:

4140 P-110	9CH 80K MYS
4140 L-80	13CH 80K MYS (STD.)
17-4 PH HH 1150SS	13CH 90K MYS
718 INCONNEL	13CH 95K MYS
316SS	13CH 100K MYS
410SS	



PARTS LIST

ITEM	PART NAME	NO. REQ.	PART NO.
--	"GXD" Circulating Sleeve	--	1109-00-275-114
1	Top Sub	1	2021-00-275-112
2	Middle Sub	1	2027-00-275-000
**3	O-Ring	2	#237
4	Inner Sleeve	1	2032-00-275-000
5	Bottom Sub	1	2026-00-275-112
6	Female Adapter, Steel	4	2014-00-275-000
**7	V-Packing	10	2015-00-275-000
**8	O-Ring	2	#414
9	Split Ring Segments	6	2020-00-275-00
**10	O-Ring	1	#338
**11	Female Adapter, Steel	2	2020-00-275-00
Seal Bore = 2.750		Inner Sleeve I.D. = 2.790	

** Recommended Spare Parts

Note: Length of sleeve is as shown, varying with thread and bore size relationships.

2.81" GXD CIRCULATING SLEEVE W/ 3-1/2" EUE Pin x Pin

The "GXD" Circulating Sleeve provides a convenient way to establish or shut off communication between the tubing and the annulus. Any number of these sleeves may be run in a tubing string, and any or all of them may be opened or closed in one run by standard wireline methods.

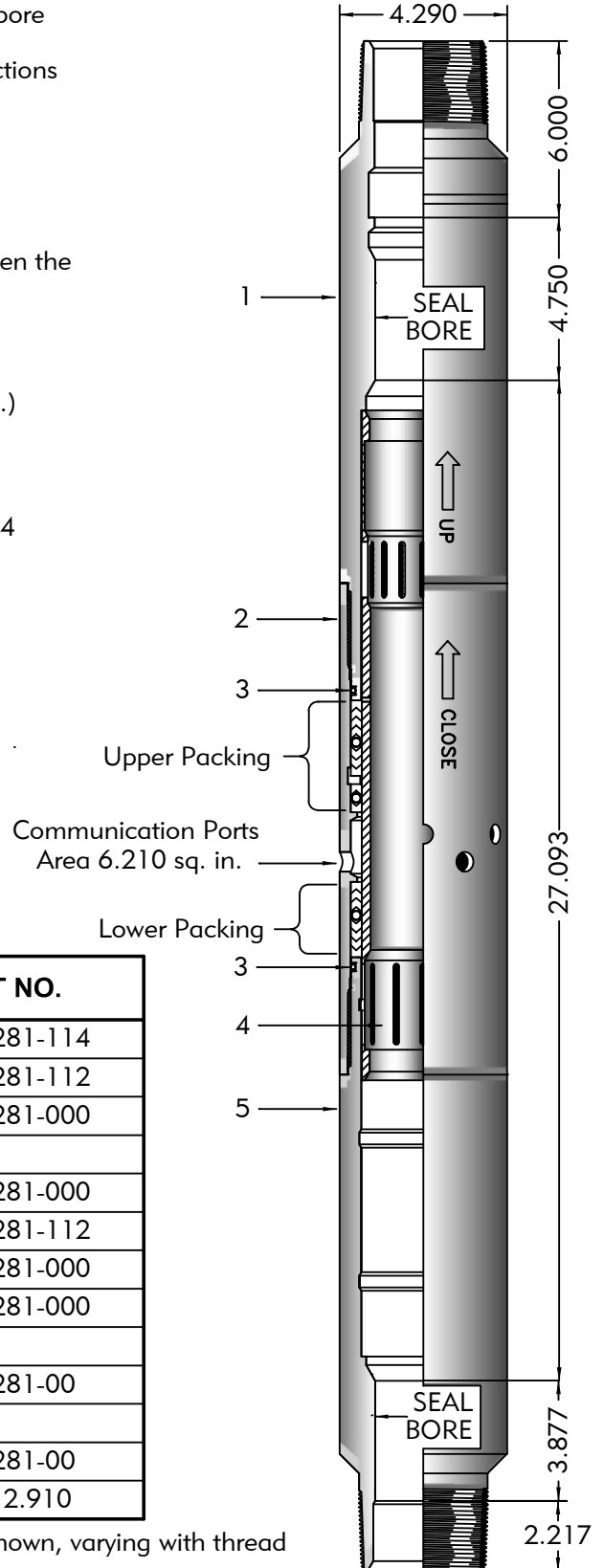
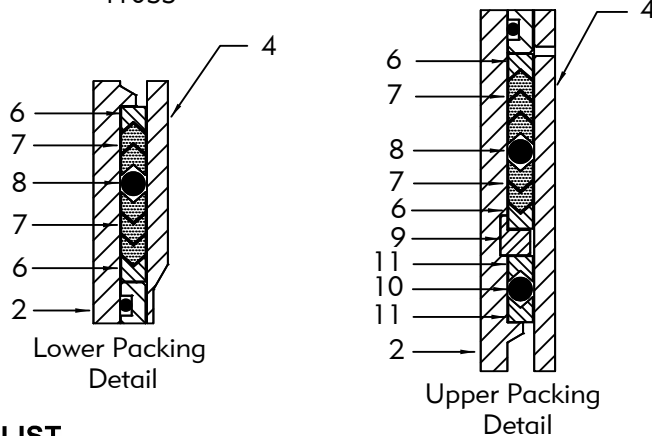


DESIGN FEATURES:

- * Features a nipple profile above and a packing bore above and below the communication ports.
- * Ports can be closed without leaving any obstructions in the tubing once the shifting operation is completed.
- * The Model "B" Shifting Tool is used to open (jarring down) or close (jarring up) the "GXD" Circulating sleeve.
- * All premium threads available.
- * The "GXD" Sleeve has a larger flow area between the tubing and the annulus.

MATERIAL SELECTION:

4140 P-110	9CH 80K MYS
4140 L-80	13CH 80K MYS (STD.)
17-4 PH HH 1150SS	13CH 90K MYS
718 INCONNEL	13CH 95K MYS
316SS	13CH 100K MYS
410SS	



PARTS LIST

ITEM	PART NAME	NO. REQ.	PART NO.
--	"GXD" Circulating Sleeve	--	1109-00-281-114
1	Top Sub	1	2021-00-281-112
2	Middle Sub	1	2027-00-281-000
**3	O-Ring	2	#238
4	Inner Sleeve	1	2032-00-281-000
5	Bottom Sub	1	2026-00-281-112
6	Female Adapter, Steel	4	2014-00-281-000
**7	V-Packing	10	2015-00-281-000
**8	O-Ring	2	#415
9	Split Ring Segments	6	2020-00-281-00
**10	O-Ring	1	#339
**11	Female Adapter, Steel	2	2020-00-281-00
Seal Bore = 2.813		Inner Sleeve I.D. = 2.910	

** Recommended Spare Parts

Note: Length of sleeve is as shown, varying with thread and bore size relationships.