

## FULL CIRCLE RELEASING SPEARS

### Overview

Logan Full Circle Releasing Spears are used to internally engage and retrieve all sizes of tubing, drill pipe, and casing. It may be used with internal cutters for cut and pull operations. Full Circle Releasing Spears are designed to evenly distribute expansion strain over a long vertical section of a fish and ensure positive internal engagement. The design of the slips and the effect of the body tapers upon the slips permits tremendous pulling and jarring strains with no danger of distortion to the fish.

### Construction

The Logan Full Circle Releasing Spear consists of a body, sleeve (integral with body), slip, unitizer, stop, safety ring, friction block, retainer screw and retainer set, and a mill type nut. Sub, bullnose, and sidehill type nuts are also available. The size and type of the upper box connection is furnished according to customer specification. Construction of the Full Circle Releasing Spear varies slightly according to size. Tubing and drill pipe Spears with four-inch nominal tubing and above, and all casing Spears, utilize Friction Block Assemblies as the friction grip mechanism.

### Body

The body has a series of large tapers on the outside diameter that match similar tapers on the inside of the slips. During operation, the tapers cause the slips to expand and contact the fish. Lugs near the upper end of the body hold the upper ends of the slips in position.

### Slips

The design of the full circle slips allows easy entry into or withdrawal from the fish. The slips form an almost complete diameter when retracted resulting in more slip engagement than most other spears. This design feature reduces any distortion to the fish.

### Unitizer

The lower ends of the slips are held in position by the unitizer that fits around the lower end of the body. The unitizer is kept in place by the stop, safety ring, and nut at the lower end of the body.

### Safety Ring

The safety ring prevents the Spear from entering a fish with an inside diameter that is too small for the retracted slips to enter.

### Friction Blocks

The friction grip mechanism is a friction block assembly that includes inner and outer block springs. Friction blocks and springs contact the inner wall of the fish and hold the unitizer, retainer set, and slips in place until the shoulders of the tapers on the downwardly traveling body contact the ends of the slips and the assembly is pushed into the fish to the desired depth.

### Nut

The nut guides the Spear into the fish. A mill type nut is used to cut away the distorted end of a fish to ensure that the Spear enters the fish. If the fish is embedded in the side wall of a hole or is badly out of line, a sidehill type nut can be used to align the Spear to the fish. When the use of other tools is required below the Spear, such as an internal cutter, a sub type nut can provide the necessary connection.

### Assembly

Connect the Spear to the bottom of the fishing string. The Spear should be in the retracted position with the upper and lower end of the slips engaged with the lugs on the body and the unitizer. The retracted slips will not engage the pipe as the Spear is run in.

### Operation

#### Engaging and Pulling the Fish

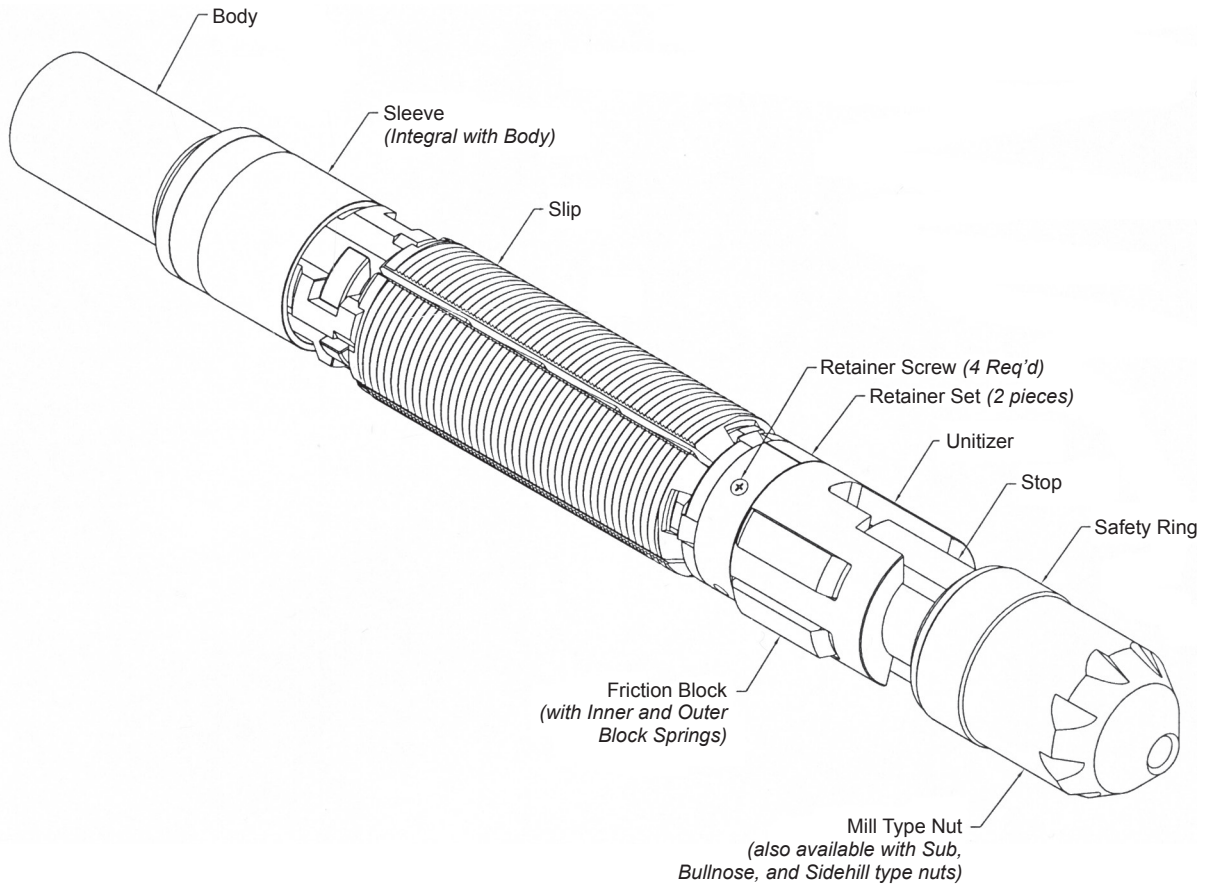
Slowly lower the fishing string until the Spear enters the fish at the desired depth. Rotate the fishing string at least one-sixth of a turn to the left for a left-hand spears (to the right for a right-hand spears). In deep or crooked holes, it may be necessary to rotate the string more than one-sixth of a turn. Additional rotation will not harm the operation of the Spear. Pull on the fish by raising the fishing string.

#### Releasing the Fish

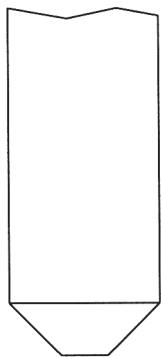
Bump down the full weight of the fishing string. Rotate the string at least one-sixth of a turn to the right for left-hand spears (to the left for right-hand spears). In deep or crooked holes, it may be necessary to rotate the string more than one-sixth of a turn. Additional rotation will not harm the operation of the Spear. Elevate the fishing string until it clears the fish. If the Spear will not release from the fish, bump down, and then simultaneously rotate the string to the right and slowly raise the string until the Spear clears the fish. It is important to combine rotation with elevation.

#### When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of top connection
- (3) Size and type of fish to be caught



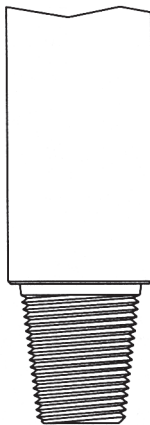
**Optional Nuts**



Bullnose Type Nut



Sidehill Type Nut



Sub Type Nut

## FULL CIRCLE RELEASING SPEARS

<b>NOMINAL SIZE</b>		2-3/8 DP	2-3/8 Tbg	2-7/8 DP	2-7/8 Tbg	3-1/2 DP	3-1/2 Tbg	4 DP
<b>RECOMMENDED CATCHING RANGE *</b>		2-3/8 DP	2-3/8 Tbg	2-7/8 DP	2-7/8 Tbg	3-1/2 DP	3-1/2 Tbg	4 DP
<b>OD SMALLEST SLIPS RETRACTED</b>		1-11/16	1-29/32	2	2-5/16	2-7/16	2-13/16	3-3/32
<b>EXPANSION SLIPS OVER SAFETY RING</b>		11/32	11/32	3/8	3/8	13/32	13/32	15/32
<b>SLIP ENGAGEMENT AREA (SQ IN)</b>		55	59	74	87	95	115	126
<b>COMPLETE ASSEMBLY</b>	<b>Logan Part No.</b>	<b>204-000</b>	<b>204-001</b>	<b>204-002 †</b>	<b>204-003 ††</b>	<b>204-004</b>	<b>204-005</b>	<b>204-006</b>
	Bowen No.	6175	6693	6246	6684	7640	6701	7648
<b>TOP SUB</b> <i>(Includes Protector)</i>	<b>Logan Part No.</b>	<b>AV1000</b>	<b>AV1001</b>	<b>AV1002</b>	<b>AV1003</b>	<b>AV1004</b>	<b>AV1005</b>	<b>AV1006</b>
	Bowen No.	6176	5858	6247	5774	6363	6702	6676
<b>PROTECTOR</b>	<b>Logan Part No.</b>	<b>AV2000</b>	<b>AV2001</b>	<b>AV2002</b>	<b>AV2003</b>	<b>AV2004</b>	<b>AV2005</b>	<b>AV2006</b>
	Bowen No.	6176-1	5858-1	6247-1	5774-1	6363-1	6702-1	6676-1
<b>BODY</b>	<b>Logan Part No.</b>	<b>AV3000</b>	<b>AV3001</b>	<b>AV3002</b>	<b>AV3003</b>	<b>AV3004</b>	<b>AV3005</b>	<b>AV3006</b>
	Bowen No.	6177	6694	6248	6685	7641	6703	7649
<b>SLIP</b> <i>(Includes Fingers)</i>	<b>Logan Part No.</b>	<b>AV4000</b>	<b>AV4001</b>	<b>AV4002</b>	<b>AV4003</b>	<b>AV4004</b>	<b>AV4005</b>	<b>AV4006</b>
	Bowen No.	6178	6695	6249	6686	C7642	6704	7650
	No. Req'd	3	3	3	3	3	3	3
<b>UNITIZER</b>	<b>Logan Part No.</b>	<b>AV5000</b>	<b>AV5001</b>	<b>AV5002</b>	<b>AV5003</b>	<b>AV5004</b>	<b>AV5005</b>	...
	Bowen No.	6179	6696	6250	6687	A7643	A6705	...
<b>FRICTION RETAINER</b> <i>(Includes Springs)</i>	<b>Logan Part No.</b>	<b>AV6000</b>	<b>AV6001</b>	<b>AV6002</b>	<b>AV6003</b>	<b>AV6004</b>	<b>AV6005</b>	...
	Bowen No.	6546F	6697F	A6542F	6688F	7644F	A6706F	...
<b>FRICTION RETAINER SCREWS</b>	<b>Logan Part No.</b>	<b>AV7000</b>	<b>AV7000</b>	<b>AV7000</b>	<b>AV7000</b>	<b>AV7000</b>	<b>AK9004-001</b>	...
	Bowen No.	6423	6423	6423	6423	6423	23508	...
	No. Req'd	4	4	4	4	4	4	...
<b>FRICTION RETAINER SPRINGS</b>	<b>Logan Part No.</b>	<b>AV8000</b>	<b>AV8000</b>	<b>AV8001</b>	<b>AV8001</b>	<b>AV8002</b>	<b>AV8002</b>	...
	Bowen No.	8951	8951	8945	8945	A8952	A8952	...
	No. Req'd	8	8	10	10	12	12	...
<b>FRICTION BLOCK ASSY.</b> <i>Consists of:</i>	<b>Logan Part No.</b>	...	...	...	...	...	...	<b>AV90000</b>
	Bowen No.	...	...	...	...	...	...	14931
<b>UNITIZER</b>	<b>Logan Part No.</b>	...	...	...	...	...	...	<b>AV10000</b>
	Bowen No.	...	...	...	...	...	...	14932
<b>RETAINER SET</b> <i>(2 pieces)</i>	<b>Logan Part No.</b>	...	...	...	...	...	...	<b>AV11000</b>
	Bowen No.	...	...	...	...	...	...	14933
<b>FRICTION BLOCK</b>	<b>Logan Part No.</b>	...	...	...	...	...	...	<b>AV12000</b>
	Bowen No.	...	...	...	...	...	...	14934
	No. Req'd	...	...	...	...	...	...	2
<b>RETAINER SCREW</b>	<b>Logan Part No.</b>	...	...	...	...	...	...	<b>AV13000</b>
	Bowen No.	...	...	...	...	...	...	15964
	No. Req'd	...	...	...	...	...	...	4
<b>OUTER BLOCK SPRING</b>	<b>Logan Part No.</b>	...	...	...	...	...	...	<b>AV14000</b>
	Bowen No.	...	...	...	...	...	...	14935
	No. Req'd	...	...	...	...	...	...	4
<b>INNER BLOCK SPRING</b>	<b>Logan Part No.</b>	...	...	...	...	...	...	<b>AV15000</b>
	Bowen No.	...	...	...	...	...	...	14936
	No. Req'd	...	...	...	...	...	...	4
<b>STOP</b>	<b>Logan Part No.</b>	<b>AV16000</b>	<b>AV16001</b>	<b>AV16002</b>	<b>AV16003</b>	<b>AV16004</b>	<b>AV16005</b>	<b>AV16006</b>
	Bowen No.	7638	6961	7639	A7452	A7645	7647	7653
<b>SAFETY RING</b>	<b>Logan Part No.</b>	<b>AV17000</b>	<b>AV17001</b>	<b>AV17002</b>	<b>AV17003</b>	<b>AV17004</b>	<b>AV17005</b>	<b>AV17006</b>
	Bowen No.	6547	6545	6543	6424	6541	6707	6681
<b>NUT</b>	<b>Logan Part No.</b>	<b>AV18000</b>	<b>AV18001</b>	<b>AV18002</b>	<b>AV18003</b>	<b>AV18004</b>	<b>AV18005</b>	<b>AV18006</b>
	Bowen No.	6180	5864	6251	6345	6267	6708	6682
<b>NUT SET SCREW</b>	<b>Logan Part No.</b>	<b>AV19000</b>	<b>AV19000</b>	<b>AV19001</b>	<b>AV19001</b>	<b>AV19001</b>	<b>AV19002</b>	<b>AV19003</b>
	Bowen No.	23330	23330	17762	17762	17762	23358	23345
	No. Req'd	2	2	2	2	2	2	2

Logan Oil Tools reserves the right to change or discontinue designs without notice.

**CAUTION:**

† 204-002 dressed for 2-7/8" 8.7 lb tubing will not go in completely. The top sub O.D. is 3-5/8" and will not fit into tubing.

†† 204-003 dressed for 2-7/8" 8.7 lb tubing will not go in completely. The top sub O.D. is 2-5/16" and will not fit into tubing.

## FULL CIRCLE RELEASING SPEARS

NOMINAL SIZE	2-3/8 DP	2-3/8 Tbg	2-7/8 DP	2-7/8 Tbg	3-1/2 DP	3-1/2 Tbg	4 DP	
RECOMMENDED CATCHING RANGE *	2-3/8 DP	2-3/8 Tbg	2-7/8 DP	2-7/8 Tbg	3-1/2 DP	3-1/2 Tbg	4 DP	
OD SMALLEST SLIPS RETRACTED	1-11/16	1-29/32	2	2-5/16	2-7/16	2-13/16	3-3/32	
EXPANSION SLIPS OVER SAFETY RING	11/32	11/32	3/8	3/8	13/32	13/32	15/32	
SLIP ENGAGEMENT AREA (SQ IN)	55	59	74	87	95	115	126	
<b>COMPLETE ASSEMBLY</b>	<b>Logan Part No.</b>	<b>204-000</b>	<b>204-001</b>	<b>204-002 †</b>	<b>204-003 ††</b>	<b>204-004</b>	<b>204-005</b>	<b>204-006</b>
	Bowen No.	6175	6693	6246	6684	7640	6701	7648

## OPTIONAL COMPONENTS

<b>UNITIZER</b>	<b>Logan Part No.</b>	...	...	...	...	...	...	<b>AV20000</b>
	Bowen No.	...	...	...	...	...	...	7651
<b>FRICITION RETAINER</b> <i>(Includes Springs)</i>	<b>Logan Part No.</b>	...	...	...	...	...	...	<b>AV21000</b>
	Bowen No.	...	...	...	...	...	...	7652F
<b>FRICITION RETAINER</b> <b>SCREWS</b>	<b>Logan Part No.</b>	...	...	...	...	...	...	<b>AV22000</b>
	Bowen No.	...	...	...	...	...	...	23508
	No. Req'd	...	...	...	...	...	...	4
<b>FRICITION RETAINER</b> <b>SPRINGS</b>	<b>Logan Part No.</b>	...	...	...	...	...	...	<b>AV23000</b>
	Bowen No.	...	...	...	...	...	...	A8953
	No. Req'd	...	...	...	...	...	...	12
<b>FRICITION BLOCK</b>	<b>Logan Part No.</b>	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...

## OPTIONAL ACCESSORIES

<b>SAFETY RING PACK-OFF</b>	<b>Logan Part No.</b>	<b>AV25000</b>	<b>AV25001</b>	<b>AV25002</b>	<b>AV25003</b>	<b>AV25004</b>	<b>AV25005</b>	<b>AV25006</b>
	Bowen No.	6181	6174	6252	5779	6268	6709	6683
<b>EXTENSION</b> (3 feet long)	<b>Logan Part No.</b>	<b>AV26000</b>	<b>AV26001</b>	<b>AV26002</b>	<b>AV26003</b>	<b>AV26004</b>	<b>AV26005</b>	<b>AV26006</b>
	Bowen No.	6176-6177	5858-6694	6247-6248	5771-6685	6263-7641	6702-6703	6676-7649
<b>MILL TYPE NUT</b>	<b>Logan Part No.</b>	<b>AV18000-A</b>	<b>AV18001-A</b>	<b>AV18002-A</b>	<b>AV18003-A</b>	<b>AV18004-A</b>	<b>AV18005-A</b>	<b>AV18006-A</b>
	Bowen No.	6180A	5864A	6251A	6345A	6267A	6708A	6682A
<b>SUB TYPE NUT</b>	<b>Logan Part No.</b>	<b>AV18000-B</b>	<b>AV18001-B</b>	<b>AV18002-B</b>	<b>AV18003-B</b>	<b>AV18004-B</b>	<b>AV18005-B</b>	<b>AV18006-B</b>
	Bowen No.	6180B	5864B	6251B	6345B	6267B	6708B	6682B
<b>SIDEHILL TYPE NUT</b>	<b>Logan Part No.</b>	<b>AV18000-C</b>	<b>AV18001-C</b>	<b>AV18002-C</b>	<b>AV18003-C</b>	<b>AV18004-C</b>	<b>AV18005-C</b>	<b>AV18006-C</b>
	Bowen No.	6180C	5864C	6251C	6345C	6267C	6708C	6682C

\* Size and weight of pipe to be caught

### CAUTION:

† 204-002 dressed for 2-7/8" 8.7 lb tubing will not go in completely. The top sub O.D. is 3-5/8" and will not fit into tubing.  
 †† 204-003 dressed for 2-7/8" 8.7 lb tubing will not go in completely. The top sub O.D. is 2-5/16" and will not fit into tubing.

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### When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of top connection
- (3) Size and type of fish to be caught

### Recommended Spare Parts:

- (1) 2 sets of Slips for each size
- (2) 1 Safety Ring for each size
- (3) 1 unitizer and 2 friction retainers on 2-3/8" to 3-1/2" Tubing Spears  
or 2 friction block assemblies on 4" Tubing Spears and larger
- (4) 1 Stop

## FULL CIRCLE RELEASING SPEARS

<b>NOMINAL SIZE</b>		4 Tbg	4-1/2 DP	5-1/2 DP	4-1/2 Csg	5 Csg	5-1/2 Csg	6 Csg
<b>RECOMMENDED CATCHING RANGE *</b>		4 Tbg	4-1/2 DP & 5-9/16 DP	5-1/2 & 5 Csg	4-1/2, 4-3/4	5 Csg	5-1/2 Csg	6 Csg
<b>OD SMALLEST SLIPS RETRACTED</b>		3-5/16	3-15/32	4-1/2	3-25/32	4	4-1/2	5-1/2
<b>EXPANSION SLIPS OVER SAFETY RING</b>		15/32	1/2	9/16	1/2	1/2	9/16	9/16
<b>SLIP ENGAGEMENT AREA (SQ IN)</b>		136	178	265	210	217	265	315
<b>COMPLETE ASSEMBLY</b>	<b>Logan Part No.</b>	<b>204-007</b>	<b>204-008</b>	<b>204-009</b>	<b>204-010</b>	<b>204-011</b>	<b>204-012</b>	<b>204-013</b>
	<b>Bowen No.</b>	6710	6715	6723	10536	9337	9342	9347
<b>TOP SUB</b>	<b>Logan Part No.</b>	<b>AV1007</b>	<b>AV1008</b>	<b>AV1009</b>	...	...	...	...
<i>(Includes Protector)</i>	<b>Bowen No.</b>	5839	6270	6277	...	...	...	...
<b>PROTECTOR</b>	<b>Logan Part No.</b>	<b>AV2007</b>	<b>AV2008</b>	<b>AV2009</b>	...	...	...	...
	<b>Bowen No.</b>	5839-1	6270-1	6277-1	...	...	...	...
<b>BODY</b>	<b>Logan Part No.</b>	<b>AV3007</b>	<b>AV3008</b>	<b>AV3009</b>	<b>AV3010</b>	<b>AV3011</b>	<b>AV3012</b>	<b>AV3013</b>
	<b>Bowen No.</b>	6711	6716	6724	10537	C9338	9343	9348
<b>SLIP</b>	<b>Logan Part No.</b>	<b>AV4007</b>	<b>AV4008</b>	<b>AV4009</b>	<b>AV4010</b>	<b>AV4011</b>	<b>AV4012</b>	<b>AV4013</b>
<i>(Includes Fingers)</i>	<b>Bowen No.</b>	6712	6717	6725	10538	9339	9344	9349
	<b>No. Req'd</b>	3	3	4	3	3	4	4
<b>UNITIZER</b>	<b>Logan Part No.</b>	...	...	...	...	...	...	...
	<b>Bowen No.</b>	...	...	...	...	...	...	...
<b>FRICTION RETAINER</b>	<b>Logan Part No.</b>	...	...	...	...	...	...	...
<i>(Includes Springs)</i>	<b>Bowen No.</b>	...	...	...	...	...	...	...
<b>FRICTION RETAINER</b>	<b>Logan Part No.</b>	...	...	...	...	...	...	...
<b>SCREWS</b>	<b>Bowen No.</b>	...	...	...	...	...	...	...
	<b>No. Req'd</b>	...	...	...	...	...	...	...
<b>FRICTION RETAINER</b>	<b>Logan Part No.</b>	...	...	...	...	...	...	...
<b>SPRINGS</b>	<b>Bowen No.</b>	...	...	...	...	...	...	...

\* Size and weight of pipe to be caught

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### When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of top connection
- (3) Size and type of fish to be caught

### Recommended Spare Parts:

- (1) 2 sets of Slips for each size
- (2) 1 Safety Ring for each size
- (3) 1 unitizer and 2 friction retainers on 2-3/8" to 3-1/2" Tubing Spears  
or 2 friction block assemblies on 4" Tubing Spears and larger
- (4) 1 Stop

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<b>NOMINAL SIZE</b>	4 Tbg	4-1/2 DP	5-1/2 DP	4-1/2 Csg	5 Csg	5-1/2 Csg	6 Csg	
<b>RECOMMENDED CATCHING RANGE *</b>	4 Tbg	4-1/2 DP & 5-9/16 DP	5-1/2 & 5 Csg	4-1/2, 4-3/4	5 Csg	5-1/2 Csg	6 Csg	
<b>OD SMALLEST SLIPS RETRACTED</b>	3-5/16	3-15/32	4-1/2	3-25/32	4	4-1/2	5-1/2	
<b>EXPANSION SLIPS OVER SAFETY RING</b>	15/32	1/2	9/16	1/2	1/2	9/16	9/16	
<b>SLIP ENGAGEMENT AREA (SQ IN)</b>	136	178	265	210	217	265	315	
<b>COMPLETE ASSEMBLY</b>	<b>Logan Part No.</b>	<b>204-007</b>	<b>204-008</b>	<b>204-009</b>	<b>204-010</b>	<b>204-011</b>	<b>204-012</b>	<b>204-013</b>
	<b>Bowen No.</b>	6710	6715	6723	10536	9337	9342	9347
<b>FRICION BLOCK ASSEMBLY</b>	<b>Logan Part No.</b>	<b>AV90001</b>	<b>AV90002</b>	<b>AV90003</b>	<b>AV90004</b>	<b>AV90005</b>	<b>AV90006</b>	<b>AV90007</b>
	<b>Bowen No.</b>	14901	14937	14838	14923	14943	14949	14950
<i>Consists of:</i>								
<b>UNITIZER</b>	<b>Logan Part No.</b>	<b>AV10001</b>	<b>AV10002</b>	<b>AV10003</b>	<b>AV10004</b>	<b>AV10005</b>	<b>AV10006</b>	<b>AV10007</b>
	<b>Bowen No.</b>	14902	14938	14839	14924	14944	14962	14951
<b>RETAINER SET (2 pieces)</b>	<b>Logan Part No.</b>	<b>AV11001</b>	<b>AV11002</b>	<b>AV11003</b>	<b>AV11004</b>	<b>AV11005</b>	<b>AV11006</b>	<b>AV11007</b>
	<b>Bowen No.</b>	14903	14939	14841	14925	14945	14841	14952
<b>FRICION BLOCK</b>	<b>Logan Part No.</b>	<b>AV12001</b>	<b>AV12002</b>	<b>AV12003</b>	<b>AV12004</b>	<b>AV12005</b>	<b>AV12006</b>	<b>AV12007</b>
	<b>Bowen No.</b>	14904	14940	14840	14927	14946	14840	14953
	<b>No. Req'd</b>	2	2	4	2	2	4	4
<b>RETAINER SCREW</b>	<b>Logan Part No.</b>	<b>AV13001</b>	<b>AV13000</b>	<b>AV13002</b>	<b>AV13000</b>	<b>AV13002</b>	<b>AV13002</b>	<b>AV13003</b>
	<b>Bowen No.</b>	23108	15964	25214	15964	25214	25214	23126
	<b>No. Req'd</b>	4	4	4	4	4	4	4
<b>OUTER BLOCK SPRING</b>	<b>Logan Part No.</b>	<b>AV14001</b>	<b>AV14002</b>	<b>AV14003</b>	<b>AV14004</b>	<b>AV14005</b>	<b>AV14006</b>	<b>AV14007</b>
	<b>Bowen No.</b>	14919	14941	14842	14926	14947	14842	14954
	<b>No. Req'd</b>	4	4	8	2		4	4
<b>INNER BLOCK SPRING</b>	<b>Logan Part No.</b>	<b>AV15001</b>	<b>AV15002</b>	<b>AV15003</b>	<b>AV15004</b>	<b>AV15005</b>	<b>AV15006</b>	<b>AV15007</b>
	<b>Bowen No.</b>	14920	14942	14837	16589	14948	14837	14955
	<b>No. Req'd</b>	4	4	8	2	2	4	4
<b>STOP</b>	<b>Logan Part No.</b>	<b>AV16007</b>	<b>AV16008</b>	<b>AV16009</b>	<b>AV16010</b>	<b>AV16011</b>	<b>AV16009</b>	<b>AV16012</b>
	<b>Bowen No.</b>	7654	7655	7454	A7603	A7580	7454	7597
<b>SAFETY RING</b>	<b>Logan Part No.</b>	<b>AV17007</b>	<b>AV17008</b>	<b>AV17012</b>	<b>AV17010</b>	<b>AV17011</b>	<b>AV17012</b>	<b>AV17013</b>
	<b>Bowen No.</b>	6539	6720	6485	6733	7581	6485	6520
<b>NUT</b>	<b>Logan Part No.</b>	<b>AV18007</b>	<b>AV18008</b>	<b>AV18012</b>	<b>AV18010</b>	<b>AV18011</b>	<b>AV18012</b>	<b>AV18013</b>
	<b>Bowen No.</b>	5729	6721	6483	6376	7582	6483	6040
<b>NUT SET SCREW</b>	<b>Logan Part No.</b>	<b>AV19004</b>	<b>AV19005</b>	<b>AV19006</b>	<b>AV19005</b>	<b>AV19005</b>	<b>AV19006</b>	<b>AV19006</b>
	<b>Bowen No.</b>	23366	23368	23379	23368	23368	23379	23379
	<b>No. Req'd</b>	2	2	2	2	2	2	2

\* Size and weight of pipe to be caught

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### When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of top connection
- (3) Size and type of fish to be caught

### Recommended Spare Parts:

- (1) 2 sets of Slips for each size
- (2) 1 Safety Ring for each size
- (3) 1 unitizer and 2 friction retainers on 2-3/8" to 3-1/2" Tubing Spears  
or 2 friction block assemblies on 4" Tubing Spears and larger
- (4) 1 Stop

# LOGAN GENERAL CATALOG

OIL TOOLS

## FULL CIRCLE RELEASING SPEARS

<b>NOMINAL SIZE</b>	4 Tbg	4-1/2 DP	5-1/2 DP	4-1/2 Csg	5 Csg	5-1/2 Csg	6 Csg	
<b>RECOMMENDED CATCHING RANGE</b>	4 Tbg	4-1/2 DP & 5-9/16 DP	5-1/2 & 5 Csg	4-1/2, 4-3/4	5 Csg	5-1/2 Csg	6 Csg	
<b>OD SMALLEST SLIPS RETRACTED</b>	3-5/16	3-15/32	4-1/2	3-25/32	4	4-1/2	5-1/2	
<b>EXPANSION SLIPS OVER SAFETY RING</b>	15/32	1/2	9/16	1/2	1/2	9/16	9/16	
<b>SLIP ENGAGEMENT AREA (SQ IN)</b>	136	178	265	210	217	265	315	
<b>COMPLETE ASSEMBLY</b>	<b>Logan Part No.</b>	<b>204-007</b>	<b>204-008</b>	<b>204-009</b>	<b>204-010</b>	<b>204-011</b>	<b>204-012</b>	<b>204-013</b>
	<b>Bowen No.</b>	6710	6715	6723	10536	9337	9342	9347

## OPTIONAL COMPONENTS

<b>UNITIZER</b>	<b>Logan Part No.</b>	<b>AV20001</b>	<b>AV20002</b>	<b>AV20003</b>	<b>AV20004</b>	<b>AV20005</b>	<b>AV20006</b>	<b>AV20007</b>
	<b>Bowen No.</b>	B6713	6718	6726	10539	B9340	9345	9350
<b>FRICITION RETAINER</b> <i>(Includes Springs)</i>	<b>Logan Part No.</b>	<b>AV21001</b>	<b>AV21002</b>	<b>AV21003</b>	<b>AV21004</b>	<b>AV21005</b>	<b>AV21006</b>	<b>AV21007</b>
	<b>Bowen No.</b>	6714F	6719F	6727F	10540	9341	9346	9351
<b>FRICITION RETAINER</b> <b>SCREWS</b>	<b>Logan Part No.</b>	<b>AV22000</b>	<b>AV22000</b>	<b>AV22001</b>	<b>AV22001</b>	<b>AV22001</b>	<b>AV22001</b>	<b>AV22002</b>
	<b>Bowen No.</b>	23508	23508	25214	25214	25214	25214	23518
	<b>No. Req'd</b>	4	4	4	4	4	4	4
<b>FRICITION RETAINER</b> <b>SPRINGS</b>	<b>Logan Part No.</b>	<b>AV23000</b>	<b>AV23000</b>	<b>AV23001</b>	<b>AV23002</b>	<b>AV23002</b>	<b>AV23002</b>	<b>AV23003</b>
	<b>Bowen No.</b>	A8953	A8953	8918	10541	10541	10541	9606
	<b>No. Req'd</b>	12	14	16	14	14	16	18
<b>FRICITION BLOCK</b>	<b>Logan Part No.</b>	...	...	...	...	...	...	...
	<b>Bowen No.</b>	...	...	...	...	...	...	...

## OPTIONAL ACCESSORIES

<b>SAFETY RING PACK-OFF</b>	<b>Logan Part No.</b>	<b>AV25007</b>	<b>AV25008</b>	<b>AV25009</b>	<b>AV25010</b>	<b>AV25011</b>	<b>AV25009</b>	<b>AV25012</b>
	<b>Bowen No.</b>	5730	6722	6484	6734	A7583	6484	6041
<b>EXTENSION</b> <i>(3 feet long)</i>	<b>Logan Part No.</b>	<b>AV26007</b>	<b>AV26008</b>	<b>AV26009</b>	...	...	...	...
	<b>Bowen No.</b>	5839-6711	6270-6716	6277-6724	...	...	...	...
<b>MILL TYPE NUT</b>	<b>Logan Part No.</b>	<b>AV18007-A</b>	<b>AV18008-A</b>	<b>AV18009-A</b>	<b>AV18010-A</b>	<b>AV18011-A</b>	<b>AV18012-A</b>	<b>AV18013-A</b>
	<b>Bowen No.</b>	5729A	6721A	6483A	6376A	7582A	6483A	6040A
<b>SUB TYPE NUT</b>	<b>Logan Part No.</b>	<b>AV18007-B</b>	<b>AV18008-B</b>	<b>AV18009-B</b>	<b>AV18010-B</b>	<b>AV18011-B</b>	<b>AV18012-B</b>	<b>AV18013-B</b>
	<b>Bowen No.</b>	5729B	6721B	6483B	6376B	7582B	6483B	6040B
<b>SIDEHILL TYPE NUT</b>	<b>Logan Part No.</b>	<b>AV18007-C</b>	<b>AV18008-C</b>	<b>AV18009-C</b>	<b>AV18010-C</b>	<b>AV18011-C</b>	<b>AV18012-C</b>	<b>AV18013-C</b>
	<b>Bowen No.</b>	5729C	6721C	6483C	6376C	7582C	6483C	6040C

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# LOGAN GENERAL CATALOG

OIL TOOLS

## FULL CIRCLE RELEASING SPEARS

NOMINAL SIZE	6-5/8 Csg	7 Csg	7 5/8 Csg	8-5/8 Csg	9-5/8 Csg	10-3/4 Csg	11-3/4 Csg
RECOMMENDED CATCHING RANGE	6-5/8 Csg	7 Csg	7 5/8 Csg & 9 Csg	8-5/8 & 10 Csg	9-5/8	10-3/4 Csg	11-3/4 to 12 Csg
OD SMALLEST SLIPS RETRACTED	5-1/2	5-3/4	6-7/16	7-1/4	8-3/16	9-1/2	10-9/16
EXPANSION SLIPS OVER SAFETY RING	5/8	5/8	5/8	11/16	3/4	13/16	13/16
SLIP ENGAGEMENT AREA (SQ IN)	350	365	430	485	580	690	785
<b>COMPLETE ASSEMBLY</b>	<b>Logan Part No.</b> 204-014	<b>204-015</b>	<b>204-016</b>	<b>204-017</b>	<b>204-018</b>	<b>204-019</b>	<b>204-020</b>
	Bowen No. 9796	9352	10608	6318	10473	6067	6073
<b>TOP SUB</b>	<b>Logan Part No.</b> ...	...	...	...	...	...	...
<i>(Includes Protector)</i>	Bowen No. ...	...	...	...	...	...	...
<b>PROTECTOR</b>	<b>Logan Part No.</b> ...	...	...	...	...	...	...
	Bowen No. ...	...	...	...	...	...	...
<b>BODY</b>	<b>Logan Part No.</b> AV3014	<b>AV3015</b>	<b>AV3016</b>	<b>AV3017</b>	<b>AV3018</b>	<b>AV3019</b>	<b>AV3020</b>
	Bowen No. 9797	9353	10609	6319	10474	6068	6074
<b>SLIP</b>	<b>Logan Part No.</b> AV4014	<b>AV4015</b>	<b>AV4016</b>	<b>AV4017</b>	<b>AV4018</b>	<b>AV4019</b>	<b>AV4020</b>
<i>(Includes Fingers)</i>	Bowen No. 9798	9354	10610	6320	10475	6069	6075
	No. Req'd 4	4	4	4	4	6	6
<b>UNITIZER</b>	<b>Logan Part No.</b> ...	...	...	...	...	...	...
	Bowen No. ...	...	...	...	...	...	...
<b>FRICTION RETAINER</b>	<b>Logan Part No.</b> ...	...	...	...	...	...	...
<i>(Includes Springs)</i>	Bowen No. ...	...	...	...	...	...	...
<b>FRICTION RETAINER</b>	<b>Logan Part No.</b> ...	...	...	...	...	...	...
<b>SCREWS</b>	Bowen No. ...	...	...	...	...	...	...
	No. Req'd ...	...	...	...	...	...	...
<b>FRICTION RETAINER</b>	<b>Logan Part No.</b> ...	...	...	...	...	...	...
<b>SPRINGS</b>	Bowen No. ...	...	...	...	...	...	...
<b>FRICTION BLOCK</b>	<b>Logan Part No.</b> AV90008	<b>AV90009</b>	<b>AV90010</b>	<b>AV90011</b>	<b>AV90012</b>	<b>AV90013</b>	<b>AV90014</b>
<b>ASSEMBLY</b>	Bowen No. 14956	14958	14964	14970	14976	14981	14986
<i>Consists of:</i>							
<b>UNITIZER</b>	<b>Logan Part No.</b> AV10008	<b>AV10009</b>	<b>AV10010</b>	<b>AV10011</b>	<b>AV10012</b>	<b>AV10013</b>	<b>AV10014</b>
	Bowen No. 14957	14959	14965	14971	14977	14982	14987
<b>RETAINER SET</b>	<b>Logan Part No.</b> AV11008	<b>AV11009</b>	<b>AV11010</b>	<b>AV11011</b>	<b>AV11012</b>	<b>AV11013</b>	<b>AV11014</b>
<i>(2 pieces)</i>	Bowen No. 14834	14960	14966	14972	14978	14983	14988
<b>FRICTION BLOCK</b>	<b>Logan Part No.</b> AV12008	<b>AV12009</b>	<b>AV12010</b>	<b>AV12011</b>	<b>AV12012</b>	<b>AV12013</b>	<b>AV12014</b>
	Bowen No. 14835	14961	14967	14973	14979	14984	14989
	No. Req'd 4	4	4	4	4	4	6
<b>RETAINER SCREW</b>	<b>Logan Part No.</b> AV13001	<b>AV13001</b>	<b>AV13004</b>	<b>AV13004</b>	<b>AV13004</b>	<b>AV13004</b>	<b>AV13004</b>
	Bowen No. 23108	23108	25221	25221	25221	25221	25221
	No. Req'd 4	4	4	4	4	4	4
<b>OUTER BLOCK SPRING</b>	<b>Logan Part No.</b> AV14008	<b>AV14008</b>	<b>AV14009</b>	<b>AV14010</b>	<b>AV14011</b>	<b>AV14011</b>	<b>AV14014</b>
	Bowen No. 14836	14836	14968	14974	17694	17694	14990
	No. Req'd 8	8	8	8	12	12	18
<b>INNER BLOCK SPRING</b>	<b>Logan Part No.</b> AV15006	<b>AV15006</b>	<b>AV15008</b>	<b>AV15009</b>	<b>AV15010</b>	<b>AV15010</b>	...
	Bowen No. 14837	14837	14969	14975	11816	11816	...
	No. Req'd 8	8	8	8	12	12	...
<b>STOP</b>	<b>Logan Part No.</b> AV16013	<b>AV16014</b>	<b>AV16015</b>	<b>AV16016</b>	<b>AV16018</b>	<b>AV16017</b>	<b>AV16019</b>
	Bowen No. B6965	7609	7626	7494	7531	7627	7628
<b>SAFETY RING</b>	<b>Logan Part No.</b> AV17014	<b>AV17015</b>	<b>AV17016</b>	<b>AV17017</b>	<b>AV17018</b>	<b>AV17019</b>	<b>AV17020</b>
	Bowen No. 6488	6522	6524	6528	6531	6533	6535
<b>NUT</b>	<b>Logan Part No.</b> AV18014	<b>AV18015</b>	<b>AV18016</b>	<b>AV18017</b>	<b>AV18018</b>	<b>AV18019</b>	<b>AV18020</b>
	Bowen No. 6108	6046	6054	6321	6062	6071	6079
<b>NUT SET SCREW</b>	<b>Logan Part No.</b> AV19006	<b>AV19006</b>	<b>AV19007</b>	<b>AV19007</b>	<b>AV19007</b>	<b>AV19008</b>	<b>AV19008</b>
	Bowen No. 23379	23379	23386	23386	23386	41056	41056
	No. Req'd 2	2	2	2	2	2	2



### FULL CIRCLE RELEASING SPEARS

<b>NOMINAL SIZE</b>	6-5/8 Csg	7 Csg	7-5/8 Csg	8-5/8 Csg	9-5/8 Csg	10-3/4 Csg	11-3/4 Csg	
<b>RECOMMENDED CATCHING RANGE *</b>	6-5/8 Csg	7 Csg	7-5/8 Csg & 9 Csg	8-5/8 & 10 Csg	9-5/8	10-3/4 Csg	11-3/4 to 12 Csg	
<b>OD SMALLEST SLIPS RETRACTED</b>	5-1/2	5-3/4	6-7/16	7-1/4	8-3/16	9-1/2	10-9/16	
<b>EXPANSION SLIPS OVER SAFETY RING</b>	5/8	5/8	5/8	11/16	3/4	13/16	13/16	
<b>SLIP ENGAGEMENT AREA (SQ IN)</b>	350	365	430	485	580	690	785	
<b>COMPLETE ASSEMBLY</b>	<b>Logan Part No.</b>	<b>204-014</b>	<b>204-015</b>	<b>204-016</b>	<b>204-017</b>	<b>204-018</b>	<b>204-019</b>	<b>204-020</b>
	<b>Bowen No.</b>	9796	9352	10608	6318	10473	6067	6073

### OPTIONAL COMPONENTS

<b>UNITIZER</b>	<b>Logan Part No.</b>	<b>AV20008</b>	<b>AV20009</b>	<b>AV20010</b>	<b>AV20011</b>	<b>AV20012</b>	<b>AV20013</b>	<b>AV20014</b>
	<b>Bowen No.</b>	9799	9355	10611	7493	10476	6070	6078
<b>FRICTION RETAINER</b> <i>(Includes Springs)</i>	<b>Logan Part No.</b>	<b>AV21008</b>	<b>AV21009</b>	<b>AV21010</b>	<b>AV21011</b>	<b>AV21012</b>	<b>AV21013</b>	<b>AV21014</b>
	<b>Bowen No.</b>	9800	9356	10612	7495F	B10477	6532F	6534
<b>FRICTION RETAINER</b> <b>SCREWS (4 req'd)</b>	<b>Logan Part No.</b>	<b>AV22003</b>	<b>AV22003</b>	<b>AV22004</b>	<b>AV22004</b>	<b>AV22004</b>	<b>AV22004</b>	<b>AV22004</b>
	<b>Bowen No.</b>	6964	6964	25175	25175	25175	25175	25175
<b>FRICTION RETAINER</b> <b>SPRINGS</b>	<b>Logan Part No.</b>	<b>AV23003</b>	<b>AV23003</b>	<b>AV23004</b>	<b>AV23005</b>	<b>AV23005</b>	<b>AV23011</b>	<b>AV23012</b>
	<b>Bowen No.</b>	9606	9606	10613	8948	8948	A9631	9631
	<b>No. Req'd</b>	18	20	16	14	16	16	18
<b>FRICTION BLOCK</b>	<b>Logan Part No.</b>	...	...	...	<b>AV24000</b>	...	...	<b>AV24001</b>
	<b>Bowen No.</b>	...	...	...	15001	...	...	15000

### OPTIONAL ACCESSORIES

<b>SAFETY RING PACK-OFF</b>	<b>Logan Part No.</b>	<b>AV25013</b>	<b>AV25015</b>	<b>AV25014</b>	<b>AV25016</b>	<b>AV25017</b>	<b>AV25018</b>	<b>AV25019</b>
	<b>Bowen No.</b>	6487	6047	6055	6529	6063	6072	6080
<b>EXTENSION</b> <i>(3 feet long)</i>	<b>Logan Part No.</b>	...	...	...	...	...	...	...
	<b>Bowen No.</b>	...	...	...	...	...	...	...
<b>MILL TYPE NUT</b>	<b>Logan Part No.</b>	<b>AV18014-A</b>	<b>AV18015-A</b>	<b>AV18016-A</b>	<b>AV18017-A</b>	<b>AV18018-A</b>	<b>AV18019-A</b>	<b>AV18020-A</b>
	<b>Bowen No.</b>	6108A	6046A	6054A	6321A	6062A	6071A	6079A
<b>SUB TYPE NUT</b>	<b>Logan Part No.</b>	<b>AV18014-B</b>	<b>AV18015-B</b>	<b>AV18016-B</b>	<b>AV18017-B</b>	<b>AV18018-B</b>	<b>AV18019-B</b>	<b>AV18020-B</b>
	<b>Bowen No.</b>	6108B	6046B	6054B	6321B	6062B	6071B	6079B
<b>SIDEHILL TYPE NUT</b>	<b>Logan Part No.</b>	<b>AV18014-C</b>	<b>AV18015-C</b>	<b>AV18016-C</b>	<b>AV18017-C</b>	<b>AV18018-C</b>	<b>AV18019-C</b>	<b>AV18020-C</b>
	<b>Bowen No.</b>	6108C	6046C	6054C	6321C	6062C	6071C	6079C

\* Size and weight of pipe to be caught

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#### When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of top connection
- (3) Size and type of fish to be caught

#### Recommended Spare Parts:

- (1) 2 sets of Slips for each size
- (2) 1 Safety Ring for each size
- (3) 1 unitizer and 2 friction retainers on 2-3/8" to 3-1/2" Tubing Spears  
or 2 friction block assemblies on 4" Tubing Spears and larger
- (4) 1 Stop

## FULL CIRCLE RELEASING SPEARS

<b>NOMINAL SIZE</b>		13-3/8 Csg				
<b>RECOMMENDED CATCHING RANGE *</b>		13 to 13-3/8 Csg				
<b>OD SMALLEST SLIPS RETRACTED</b>		12				
<b>EXPANSION SLIPS OVER SAFETY RING</b>		13/16				
<b>SLIP ENGAGEMENT AREA (SQ IN)</b>		890				
<b>COMPLETE ASSEMBLY</b>	<b>Logan Part No.</b>	<b>204-021</b>				
	Bowen No.	6081				
<b>TOP SUB</b>	<b>Logan Part No.</b>	...				
<i>(Includes Protector)</i>	Bowen No.	...				
<b>PROTECTOR</b>	<b>Logan Part No.</b>	...				
	Bowen No.	...				
<b>BODY</b>	<b>Logan Part No.</b>	<b>AV3021</b>				
	Bowen No.	6082				
<b>SLIP</b>	<b>Logan Part No.</b>	<b>AV4021</b>				
<i>(Includes Fingers)</i>	Bowen No.	6083				
	No. Req'd	6				
<b>UNITIZER</b>	<b>Logan Part No.</b>	...				
	Bowen No.	...				
<b>FRICITION RETAINER</b>	<b>Logan Part No.</b>	...				
<i>(Includes Springs)</i>	Bowen No.	...				
<b>FRICITION RETAINER</b>	<b>Logan Part No.</b>	...				
<b>SCREWS</b>	Bowen No.	...				
	No. Req'd	...				
<b>FRICITION RETAINER</b>	<b>Logan Part No.</b>	...				
<b>SPRINGS</b>	Bowen No.	...				

\* Size and weight of pipe to be caught

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### When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of top connection
- (3) Size and type of fish to be caught

### Recommended Spare Parts:

- (1) 2 sets of Slips for each size
- (2) 1 Safety Ring for each size
- (3) 1 unitizer and 2 friction retainers on 2-3/8" to 3-1/2" Tubing Spears  
or 2 friction block assemblies on 4" Tubing Spears and larger
- (4) 1 Stop

## FULL CIRCLE RELEASING SPEARS

NOMINAL SIZE	13-3/8 Csg				
RECOMMENDED CATCHING RANGE *	13 to 13-3/8 Csg				
OD SMALLEST SLIPS RETRACTED	12				
EXPANSION SLIPS OVER SAFETY RING	13/16				
SLIP ENGAGEMENT AREA (SQ IN)	890				
<b>COMPLETE ASSEMBLY</b>	<b>Logan Part No. 204-021</b>				
	Bowen No. 6081				
<b>FRICTION BLOCK ASSEMBLY</b>	<b>Logan Part No. AV90015</b>				
	Bowen No. 14991				
<i>Consists of:</i>					
<b>UNITIZER</b>	<b>Logan Part No. AV10015</b>				
	Bowen No. 14992				
<b>RETAINER SET (2 pieces)</b>	<b>Logan Part No. AV11015</b>				
	Bowen No. 14993				
<b>FRICTION BLOCK</b>	<b>Logan Part No. AV12015</b>				
	Bowen No. 14994				
	No. Req'd 6				
<b>RETAINER SCREW</b>	<b>Logan Part No. AV13004</b>				
	Bowen No. 25221				
	No. Req'd 4				
<b>OUTER BLOCK SPRING</b>	<b>Logan Part No. AV14015</b>				
	Bowen No. 14996				
	No. Req'd 18				
<b>INNER BLOCK SPRING</b>	<b>Logan Part No. ...</b>				
	Bowen No. ...				
	No. Req'd ...				
<b>STOP</b>	<b>Logan Part No. AV16020</b>				
	Bowen No. 7629				
<b>SAFETY RING</b>	<b>Logan Part No. AV17021</b>				
	Bowen No. 6537				
<b>NUT</b>	<b>Logan Part No. AV18021</b>				
	Bowen No. 6087				
<b>NUT SET SCREW</b>	<b>Logan Part No. AV19008</b>				
	Bowen No. 41056				
	No. Req'd 2				

\* Size and weight of pipe to be caught

Logan Oil Tools reserves the right to change or discontinue designs without notice.

**When ordering, please specify:**

- (1) Complete assembly or part number
- (2) Size and type of top connection
- (3) Size and type of fish to be caught

**Recommended Spare Parts:**

- (1) 2 sets of Slips for each size
- (2) 1 Safety Ring for each size
- (3) 1 unitizer and 2 friction retainers on 2-3/8" to 3-1/2" Tubing Spears  
or 2 friction block assemblies on 4" Tubing Spears and larger
- (4) 1 Stop

## FULL CIRCLE RELEASING SPEARS

NOMINAL SIZE	13-3/8 Csg				
RECOMMENDED CATCHING RANGE *	13 to 13-3/8 Csg				
OD SMALLEST SLIPS RETRACTED	12				
EXPANSION SLIPS OVER SAFETY RING	13/16				
SLIP ENGAGEMENT AREA (SQ IN)	890				
<b>COMPLETE ASSEMBLY</b>	<b>Logan Part No. 204-021</b>				
	Bowen No. 6081				

## OPTIONAL COMPONENTS

<b>UNITIZER</b>	<b>Logan Part No. AV20015</b>				
	Bowen No. 6086				
<b>FRICITION RETAINER</b>	<b>Part No. AV21015</b>				
<i>(Includes Springs)</i>	Bowen No. 6536F				
<b>FRICITION RETAINER</b>	<b>Logan Part No. AV22004</b>				
<b>SCREWS</b>	No. Req'd 4				
	Bowen No. 25175				
<b>FRICITION RETAINER</b>	<b>Logan Part No. AV23013</b>				
<b>SPRINGS</b>	Bowen No. 8950				
	No. Req'd 16				
<b>FRICITION BLOCK</b>	<b>Logan Part No. AV24002</b>				
	Bowen No. 14995				

## OPTIONAL ACCESSORIES

<b>SAFETY RING PACKOFF</b>	<b>Logan Part No. AV25020</b>				
	Bowen No. 6088				
<b>EXTENSION</b>	<b>Logan Part No. ...</b>				
<i>(3 feet long)</i>	Bowen No. ...				
<b>MILL TYPE NUT</b>	<b>Logan Part No. AV18021-A</b>				
	Bowen No. 6087A				
<b>SUB TYPE NUT</b>	<b>Logan Part No. AV18021-B</b>				
	Bowen No. 6087B				
<b>SIDEHILL TYPE NUT</b>	<b>Logan Part No. AV18021-C</b>				
	Bowen No. 6087C				

\* Size and weight of pipe to be caught

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### When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of top connection
- (3) Size and type of fish to be caught

### Recommended Spare Parts:

- (1) 2 sets of Slips for each size
- (2) 1 Safety Ring for each size
- (3) 1 unitizer and 2 friction retainers on 2-3/8" to 3-1/2" Tubing Spears  
or 2 friction block assemblies on 4" Tubing Spears and larger
- (4) 1 Stop