

STANDARD RELEASING SPEARS

Overview

Logan Releasing Spears provide a positive means to engage and retrieve an internal fish from the well. The design of this rugged, dependable, and inexpensive internal catch fishing tool ensures positive engagement, easy release and re-engagement. It may be used with other equipment such as pack-off assemblies and internal cutters.

Construction

The Logan Releasing Spear consists of a mandrel, grapple, releasing ring, and a bullnose nut. The size and type of the upper box connection is furnished according to customer specification.

Mandrel

The mandrel type may be specified as either flush or shoulder. Flush-type mandrels are designed to completely enter the fish. Shoulder-type mandrels provide a positive landing position on top of the fish. The mandrel is made of high strength, specially heat-treated alloy steel. The lower end is threaded to accept a bull nose nut, or the mill, sub, or sidehill type nuts.

Standard Spear Grapple

One-piece spear grapples are designed and manufactured to engage a specific size and weight of pipe, tubing, or casing to ensure maximum surface engagement and minimum fish distortion.

Segment-Type Spear Grapple

The segment-type spear grapple enhances the spear's usefulness by providing an extended catching range beyond the maximum range of the standard one-piece grapple. The Logan Segment-Type Spear Grapple consists of a grapple body, eight grapple segments, two retainer rings, four retainer ring screws, six retainer ring spacers, and sixteen grapple segment screws.

Release Ring

The cammed release ring matches the cammed nut ensuring a positive locking device that will not freeze or jam. It is a standard component of the releasing spear.

Nut

The standard bottom nut is a bullnose nut. Optional nut types, sub, mill, and sidehill, are available.

Spear Pack-off Assembly

Pack-off assemblies are available for all Logan Spear Assemblies and are designed to efficiently pack off all sizes of drill pipe, tubing and casing. Circulation through the fish is enabled by attaching the Spear Pack-off Assembly to the bottom of the spear with a sub type nut.

Assembly

With left-hand rotation, screw the grapple onto the mandrel from the lower pin end. Slip the release ring onto the mandrel and make up the nut to the mandrel aligning the cams. Screw the grapple down the mandrel against the release ring until hand tight. The Spear Assembly is now in its run-in position.

Operation

Engaging the Fish

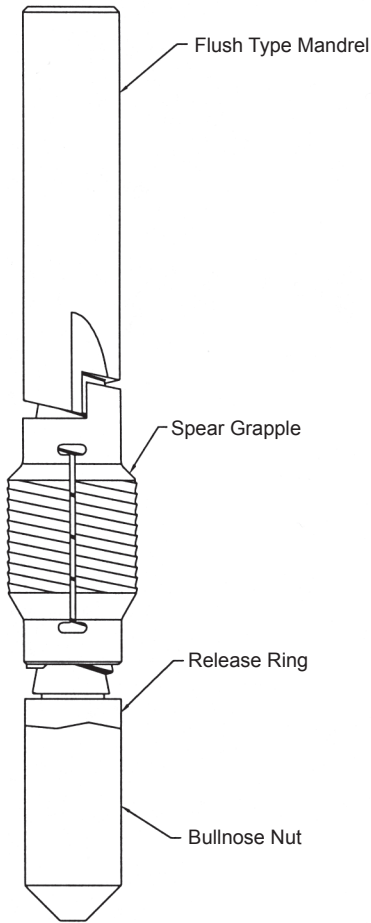
The Logan Releasing Spear is made up to the bottom of the fishing string and lowered to the desired depth into the fish. Rotate the mandrel one full turn to the left to turn the mandrel through the grapple and move the grapple into engaging position. Pulling straight up will cause the tapers on the mandrel to expand the grapple and allow it to positively engage the fish.

Releasing the Fish

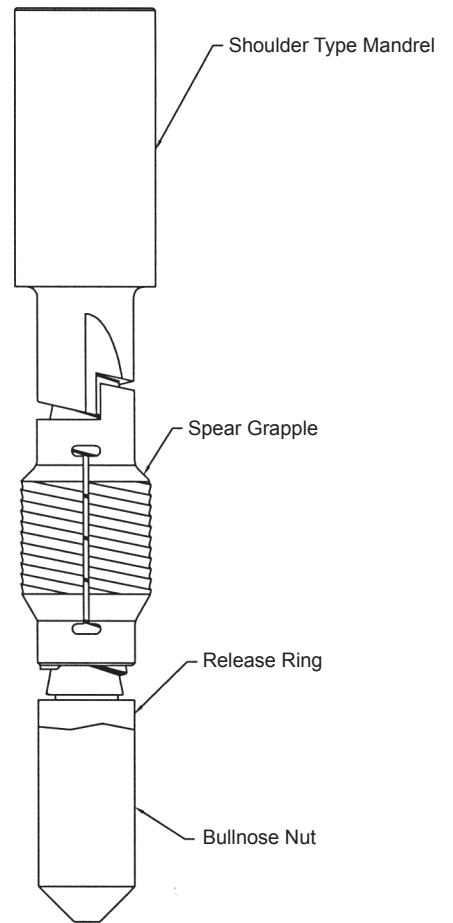
To release the fish, bump down and then make two to three rotations to the right. This right-hand rotation allows the mandrel to move up through the grapple thereby placing the grapple against the release ring and putting the spear in release position. A straight upward pull will release the spear from the fish. Continue with slow, right-hand rotation when coming out of the fish.

When ordering, please specify:

- (1) Name and part number of assembly or part
- (2) Size and type of top connection
- (3) Size and weight(s) of pipe to catch
- (4) Flush or Shoulder type (specify O.D. of shoulder, "A")
- (5) Mandrel length desired, "C"
- (6) Thread size and type of nut, if wanted

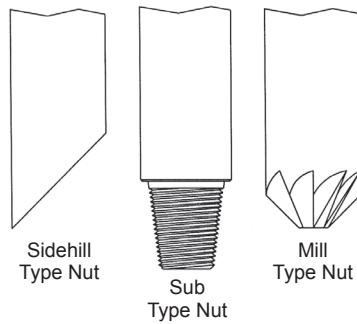


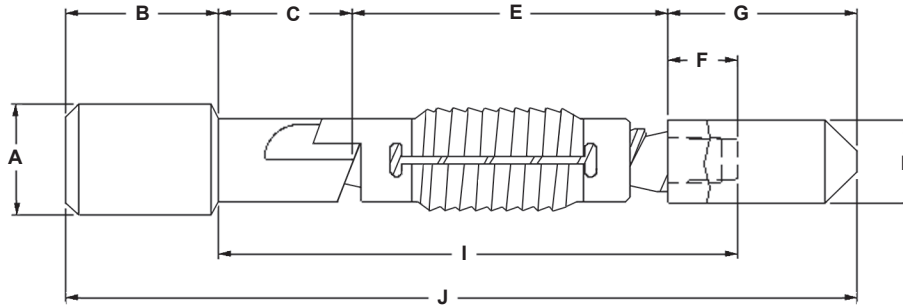
Spear Assembly
with Flush Type Mandrel



Spear Assembly
with Shoulder Type Mandrel

Optional Nuts





SHOULDER TYPE

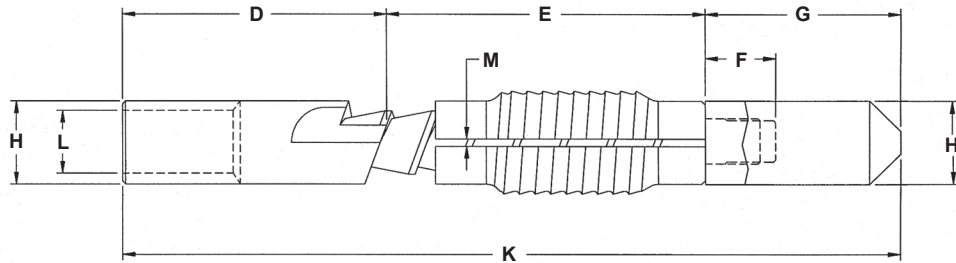
STANDARD RELEASING SPEARS PRINCIPAL DIMENSIONS

SPEAR MANDREL PART NO.	SPEAR SIZE	CLASS	ID	A	B	SHOULDER TYPE ONLY		FLUSH TYPE ONLY	
						C	D	E	
F1000	1.050 OD Pipe	Standard	...	1-1/2	4-1/8	6	...	...	2-3/8
F1001	1.313 OD Pipe	Standard	...	1-5/8	3	3	...	...	3-5/16
F1002	1.660 OD Tubing	Standard	...	1-13/16	3	3	3-25/32	...	3-5/16
F1004	1.900 OD Tubing	Standard	...	2-1/2	5	3	7	...	5-1/16
F1005	2-3/8 OD Drill Pipe	Standard	...	3-1/8	7	3	7	...	5-29/32
F1007	2-3/8 OD Tubing	Standard	3/8	3-1/8	7	3	7	...	6-3/4
F1008	2-3/8 OD Tubing	Standard	3/8	3-1/8	7	3	7	...	9
F1009	2-7/8 OD Tubing	Standard	3/8	3-3/4	7	3	7-1/4	...	6-3/4
F1010	2-7/8 OD Tubing	Heavy Duty	3/8	3-3/4	7	3	7-1/4	...	9
F1012	3-1/2 OD Tubing	Standard	1/2	3-3/4	7	3-1/2	10-1/2	...	12
F1013	3-1/2 OD Drill Pipe	Heavy Duty	1/2	3-3/8	7	3-1/2	10-1/2	...	9-3/4
F1014	4 OD Tubing	Light Duty	3/4	3-3/4	7-1/2	3	10-3/8	...	8-1/8
F1015	4 OD Tubing	Standard	3/4	4-1/8	7-1/2	3	10-1/2	...	12
F1016	4-1/2 OD Tubing	Light Duty	3/4	4-1/2	8	3-1/2	3-3/4	...	9-3/4
F1017	4-1/2 OD Tubing	Standard	3/4	4-1/2	8	3-1/2	9-1/2	...	14-1/4
F1018	5 OD Casing	Light Duty	7/8	4-3/8	8	3-1/2	9-1/2	...	9-3/4
F1019	5 OD Casing	Standard	1	5	8	3-1/2	12	...	14-1/4
F1022	6 OD Casing	Light Duty	1	6	8	5-1/2	12	...	13
F1023	6 OD Casing	Standard	1	6	8	5-1/2	12	...	13
F1024	7 OD Casing	Standard	2	7	10	6-1/2	16-1/2	...	14-5/8
F1026	7 OD Casing	Heavy Duty	2	7	10	6-1/2	13-1/2	...	21-3/8
F1029	8-5/8 OD Casing	Standard	2-3/4	8-5/8	14	7	20-7/8	...	14-5/8
F1030	8-5/8 OD Casing	Heavy Duty	2-3/4	8-5/8	...	...	20-7/8	...	21-3/8
F1032	9-5/8 OD Casing	Standard	2-13/16	9-5/8	15-3/8	7	20-7/8	...	14-5/8
F1034	9-5/8 OD Casing	Standard	2-13/16	9-5/8	...	...	20-7/8	...	21-3/8
F1035	13-3/8 OD Casing	Standard	3-1/2	13-3/8	17-7/8	7	22-3/8	...	16-7/8

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

Notes:

- 1) For Flush or Shoulder type, specify O.D. of shoulder, "A"
- 2) Mandrel length desired, "C"



FLUSH TYPE

STANDARD RELEASING SPEAR PRINCIPAL DIMENSIONS

SPEAR MANDREL PART NO.	F	G	H	I	J	SHOULDER TYPE ONLY K	FLUSH TYPE ONLY L	M
F1000	7/8	2-3/8	11/16	9-5/8	15-1/4	...	...	3/16
F1001	1-3/8	2-1/2	15/16	7-11/16	11-13/16	...	...	1/4
F1002	1-3/8	2-1/2	1-1/8	7-11/16	11-13/16	...	...	3/8
F1004	2-1/4	5-5/8	1-3/8	10-5/16	18-11/16	...	...	7/16
F1005	2-1/4	6-17/32	1-11/16	...	...	19-7/16	...	5/8
F1007	2-1/4	6-5/8	1-7/8	12	23-3/8	23-3/8	...	5/8
F1008	2-1/4	6-5/8	1-7/8	14-1/4	25-5/8	22-5/8	...	5/8
F1009	2-1/2	7	2-5/16	12-1/4	23-3/4	21	...	5/8
F1010	2-1/2	7	2-5/16	14-1/2	26	23-1/4	...	5/8
F1012	3-1/2	9	2-13/16	19	31-1/2	32-1/2	...	5/8
F1013	3-5/8	8-1/8	2-1/2	16-5/8	31-1/8	...	...	5/8
F1014	2-1/2	8	3-1/4	13-5/8	26-5/8	26-1/2	...	5/8
F1015	3-1/2	9	3-1/4	18-1/2	31-1/2	31-1/2	...	5/8
F1016	3-1/2	10-3/4	3-5/8	16-3/4	32	32	...	1
F1017	3-1/2	10	3-5/8	21-1/4	35-3/4	33-3/4	...	3/4
F1018	3-1/2	10-5/8	4-1/32	16-3/4	31-7/8	29-7/8	...	13/16
F1019	3-1/2	10-5/8	4-1/32	21-1/4	36-3/8	36-7/8	...	13/16
F1022	3-1/2	12	5	16-3/8	39-3/16	37-11/16	3-5/16	1-1/4
F1023	3-1/2	12	5	16-3/8	...	43	3-5/16	1-1/4
F1024	3-1/2	12-3/4	5-3/4	...	...	40-1/4	3-1/2	1-5/8
F1026	3-1/2	12-3/4	5-3/4	31-3/8	53-3/8	47	3-1/2	1-5/8
F1029	4-1/2	13-3/4	7-1/4	26-1/8	53-7/8	49-1/4	5	1-5/8
F1030	4-1/2	13-3/4	7-1/4	...	...	56	5-3/4	1-5/8
F1032	3-1/2	14	8-1/4	25-1/8	51	49-1/4	6-1/4	1-5/8
F1034	3-1/2	13-3/4	8-1/4	56	6-1/4	1-5/8
F1035	3-1/2	12	11-3/4	27-3/8	53-3/4	51-1/4	7-3/4	1-5/8

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Notes:

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STANDARD RELEASING SPEARS

NOMINAL CATCH SIZE O.D.		1.050	1.313	1.660	1.900	2-3/8	2-3/8	2-3/8
SPEAR O.D.		11/16	7/8 NOM	1-1/8	1-3/8	1-11/16	1-7/8	1-7/8
SPEAR I.D.		...	...	...	...	...	3/8	3/8
DUTY CLASS		STD	STD	STD	STD	STD	STD	STD
COMPLETE ASSEMBLY	Logan Part No.	202-001	202-002	202-003	202-004	202-036	202-005	202-006
	Bowen No.	16455	19350	11195	9915	9645	1344	17228

REPLACEMENT PARTS

TOP SUB	Logan Part No.	F1000-A	F1001-A	F1002-A	...	...	...	...
	Bowen No.	16456A	19351A	11196A	...	...	...	...
MANDREL (FLUSH TYPE)	Logan Part No.	F1000	F1001	F1002	F1004	F1005	F1007	F1008
	Bowen No.	16456B	19351B	11196B	9916	9646	1345	17229
GRAPPLE	Logan Part No.	F3000	F3001	F3002	F3004	F3005	F3007	F3008
	Bowen No.	16457	19352	11197	9917	9647	1348	17230
RELEASE RING	Logan Part No.	F4000	F4001	F4002	F4004	F4005	F4007	F4007
	Bowen No.	16458	19353	11198	9918	9649	1347	1347
BULL NOSE NUT	Logan Part No.	F5000	F5001	F5002	F5004	F5005	F5007	F5007
	Bowen No.	16459	19354	11199	9919	9648	1346	1346

OPTIONAL PARTS

MANDREL (SHOULDER TYPE)	Logan Part No.	F1000	F1001	F1002	F1004	F1005	F1007	F1008
	Bowen No.	16456	19351	11196	9916	9646	1345	17229
MANDREL EXTRA LENGTH PER INCH (C & D)								

ACCESSORIES

MILL TYPE NUT	Logan Part No.	F5000-A	F5001-A	F5002-A	F5004-A	F5005-A	F5007-A	F5007-A
	Bowen No.	16459-A	19354-A	11199-A	9919-A	9648-A	1346-A	1346-A
SUB TYPE NUT	Logan Part No.	F5000-B	F5001-B	F5002-B	F5004-B	F5005-B	F5007-B	F5007-B
	Bowen No.	16459-B	19354-B	11199-B	9919-B	9648-B	1346-B	1346-B
SIDE HILL NUT	Logan Part No.	F5000-C	F5001-C	F5002-C	F5004-C	F5005-C	F5007-C	F5007-C
	Bowen No.	16459-C	19354-C	11199-C	9919-C	9648-C	1346-C	1346-C

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- (5) Mandrel length desired "C"
- (6) Thread size and type of nut, if wanted

Recommended Spare Parts:

- (1) 2 Grapples for each catch size

STANDARD RELEASING SPEARS

NOMINAL CATCH SIZE O.D.		2-7/8	2-7/8	2-7/8	3-1/2	3-1/2	4	4
SPEAR O.D.		2-5/16	2-5/16	2-5/16	2-13/16	2-1/2	3-1/4	3-1/4
SPEAR I.D.		3/8	3/8	3/8	1/2	1/2	3/4	3/4
DUTY CLASS		STD	STD LH	HD	STD	HD	LD	STD
COMPLETE ASSEMBLY	Logan Part No.	202-007	202-022	202-008	202-009	202-010	202-024	202-011
	Bowen No.	1227	62198	17231	9410	9945	530	9485

REPLACEMENT PARTS

TOP SUB	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
MANDREL (FLUSH TYPE)	Logan Part No.	F1009	F10095	F1010	F1012	F1013	F1014	F1015
	Bowen No.	1231	62199	17232	9411	9946	531	9486
GRAPPLE	Logan Part No.	F3009	F30095	F3010	F3012	F3013	F3014	F3015
	Bowen No.	1230	49888	17233	9412	9947	532	9487
RELEASE RING	Logan Part No.	F4009	F4009	F4009	F4012	F4013	F4015	F4015
	Bowen No.	1229	1229	1229	1584	9948	534	534
BULL NOSE NUT	Logan Part No.	F5009	F50095	F5009	F5012	F5013	F5014	F5015
	Bowen No.	1228	62200	1228	9413	9949	533	9488

OPTIONAL

MANDREL (SHOULDER TYPE)	Logan Part No.	F1009	F10095	F1010	F1012	F1013	F1014	F1015
	Bowen No.	1231	62199	17232	9411	9946	531	9486
MANDREL EXTRA LENGTH PER INCH (C & D)								

ACCESSORIES

MILL TYPE NUT	Logan Part No.	F5009-A	F50095-A	F5010-A	F5012-A	F5013-A	F5014-A	F5015-A
	Bowen No.	1228-A	...	1228-A	9413-A	...	533-A	9488-A
SUB TYPE NUT	Logan Part No.	F5009-B	F50095-B	F5009-B	F5012-B	F5013-B	F5014-B	F5015-B
	Bowen No.	1228-B	...	1228-B	9413-B	...	533-B	9488-B
SIDE HILL NUT	Logan Part No.	F5009-C	F50095-C	F5009-C	F5012-C	F5013-C	F5014-C	F5015-A
	Bowen No.	1228-C	...	1228-C	9413-C	...	533-C	9488-C

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When ordering, please specify:

- (1) Name and part number of assembly or part
- (2) Size and type of top connection
- (3) Size and weight(s) of pipe to catch
- (4) Flush or Shoulder type (specify O.D. of shoulder, "A")
- (5) Mandrel length desired "C"
- (6) Thread size and type of nut, if wanted

Recommended Spare Parts:

- (1) 2 Grapples for each catch size

STANDARD RELEASING SPEARS

NOMINAL CATCH SIZE O.D.	4-1/2	4-1/2	5	5	6	6	7	
SPEAR O.D.	3-5/8	3-5/8	4-1/32	4-1/32	5	5	5	
SPEAR I.D.	3/4	3/4	7/8	1	1	1	2	
DUTY CLASS	LD	STD	LD	STD	LD	STD	STD	
COMPLETE ASSEMBLY	Logan Part No.	202-017	202-012	202-035	202-013	202-023	202-014	202-015
	Bowen No.	13200	17475	1332	9680	9715	17234	9266

REPLACEMENT PARTS

TOP SUB	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
MANDREL (FLUSH TYPE)	Logan Part No.	F1016	F1017	F1018	F1019	F1022	F1023	F1024
	Bowen No.	13201	17476	1333	9681	9716	17235	9267
GRAPPLE	Logan Part No.	F3016	F3017	F3018	F3019	F3022	F3023	F3024
	Bowen No.	13202	17477	1334	9682	9717	17236	9268
RELEASE RING	Logan Part No.	F4017	F4017	F4019	F4019	F4023	F4023	F4024
	Bowen No.	13183	13183	1336	1336	9718	9718	9279
BULL NOSE NUT	Logan Part No.	F5017	F5017	F5019	F5019	F5023	F5023	F5024
	Bowen No.	13184	13184	1335	1335	9719	9719	9269

OPTIONAL PARTS

MANDREL (SHOULDER TYPE)	Logan Part No.	F1016	F1017	F1018	F1019	F1022	F1023	F1024
	Bowen No.	13201	17476	1333	9681	9716	17235	9267
MANDREL EXTRA LENGTH PER INCH (C & D)	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...

ACCESSORIES

MILL TYPE NUT	Logan Part No.	F5017-A	F5017-A	F5019-A	F5019-A	F5023-A	F5023-A	F5024-A
	Bowen No.	13184-A	13184-A	1335-A	1335-A	9719-A	9719-A	9269-A
SUB TYPE NUT	Logan Part No.	F5017-B	F5017-B	F5019-B	F5019-B	F5023-B	F5023-B	F5024-B
	Bowen No.	13184-B	13184-B	1335-B	1335-B	9719-B	9719-B	9269-B
SIDE HILL NUT	Logan Part No.	F5017-C	F5017-C	F5019-C	F5019-C	F5023-C	F5023-C	F5024-C
	Bowen No.	13184-C	13184-C	1335-C	1335-C	9719-C	9719-C	9269-C

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Recommended Spare Parts:

- (1) 2 Grapples for each catch size

STANDARD RELEASING SPEARS

NOMINAL CATCH SIZE O.D.		7	8-5/8	8-5/8	9-5/8	9-5/8	13-3/8	
SPEAR O.D.		5-3/4	7-1/4	7-1/4	8-1/4	8-1/4	11-3/4	
SPEAR I.D.		2	2-3/4	2-3/4	2-13/16	2-13/16	3-1/2	
DUTY CLASS		HD	STD	HD	STD	HD	STD	
COMPLETE ASSEMBLY	Logan Part No.	202-016	202-025	202-018	202-019	202-020	202-021	
	Bowen No.	17237	9380	17243	9281	17246	27780	

REPLACEMENT PARTS

TOP SUB	Logan Part No.	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...
MANDREL (FLUSH TYPE)	Logan Part No.	F1026	F1029	F1030	F1032	F1034	F1035	
	Bowen No.	17238	9381	17244	9282	17247	27781	
GRAPPLE	Logan Part No.	F3026	F3029	F3030	F3032	F3034	F3035	
	Bowen No.	17239	9382	17245	9283	17248	27782	
RELEASE RING	Logan Part No.	F4024	F4029	F4029	F4032	F4032	F4033	
	Bowen No.	9279	9383	9383	9286	9286	27783	
BULL NOSE NUT	Logan Part No.	F5024	F5029	F5029	F5032	F5032	F5033	
	Bowen No.	9269	9384	9384	9284	9284	27784	

OPTIONAL PARTS

MANDREL (SHOULDER TYPE)	Logan Part No.	F1026	F1029	F1030	F1032	F1034	F1035	
	Bowen No.	17238	9381	17244	9282	17247	27781	
MANDREL EXTRA LENGTH PER INCH (C & D)								

ACCESSORIES

MILL TYPE NUT	Logan Part No.	F5024-A	F5029-A	F5029-A	F5032-A	F5032-A	F5035-A	
	Bowen No.	9269-A	9384-A	9384-A	9284-A	9284-A	27784-A	
SUB TYPE NUT	Logan Part No.	F5024-B	F5029-B	F5029-B	F5032-B	F5032-B	F5035-B	
	Bowen No.	9269-B	9384-B	9384-B	9284-B	9284-B	27784-B	
SIDE HILL NUT	Logan Part No.	F5024-C	F5029-C	F5029-C	F5032-C	F5032-C	F5035-C	
	Bowen No.	9269-C	9384-C	9384-C	9284-C	9284-C	27784-C	

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Recommended Spare Parts:

- (1) 2 Grapples for each catch size