



SECTION I: TOOL STRING

2013

JP042613

REBCO

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Wireline Tool String is made up of set Tools (Work String) to do specific Wireline operations down-hole. The Tools are attached to the Wire by means of **Rope Socket**. Below the Rope Socket a **Swivel Joint** is placed to avoid "torsion" or twisting of the Wire. In order to overcome the friction of the Stuffing Box packing and well pressures, **Stem** is used as weight to lower the tool string down hole. The weight of the Stem is also used to generate impact force when performing jarring action. The **Jars** enable the impact of the tool string in either direction, up or down, against any encountered obstruction down hole. To intensify an impact force to the tool string, **Accelerator** can be used. Finally, to obtain the flexibility to the tool string, a **Knuckle Joint** is placed above the selected tool to do a specific function as needed.

The following pages list a selection of Tools which are used in a Typical Tool String; chosen by the Operator to suit the work to be performed.

Rebco can supply Tool Strings from 3/8" to 2 1/2" diameters, with **Threaded Connections** as well as **QLS** (Quick Lock System), **Rebco** Type 'RQLS' and/or Type 'RQLD' Connections.



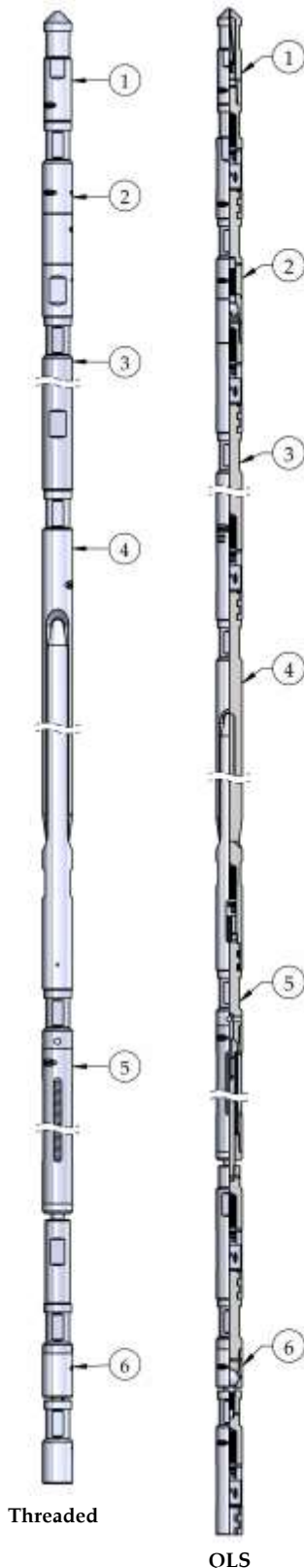
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TYPICAL TOOL STRING:



1. Rope Socket - Product Code 100

- Provides a means of connecting the tool string to the end of the Wireline.
- Selection of Rope socket Type is related to the Size of Wire and type of work to be done.

2. Swivel Joint - Product Code 104

- Minimizes the twisting of Wire when running and operating the Tool String down hole.

3. Stem (Weight Bar) - Product Code 101

- Provides the weight to overcome the friction, pressures, and fluid viscosity acting on the Tool String.
- Provides the weight required for effective Jarring impact when necessary.

4. Jars - Product Code 102

- Provide downward or upward impact. The manipulation of the Wireline by the Operator, the force of the impact is proportional to the weight of the Stem used.

5. Accelerator - Product Code 102

- Provides additional stored energy of the Jar which increases the impact force.
- **NOTE:** The Operator determines the position of the Accelerator in the Tool String for maximum effect desired.

6. Knuckle Joint - Product Code 103

- Provides the flexibility to the Tool String.
- The number of Knuckle Joints in the Tool String is determined by the Operator; to suit the type of work to be done.

To select a Tool String which suits your requirements, see **Table 1**.

Table 1: RebcO Wireline Tool String

TOOL STRING OD		THREADED CONNECTION	QLS CONNECTION	MAX OD FISHING NECK		
inches	mm			inches	mm	
3/8	9.52	1/4" - 20 UNC	NONE	NONE		
1/2	12.70	3/8" - 16 UNC		.687	17.46	
3/4	19.05	1/2" - 13 UNC		.750	19.05	
1	25.40	5/8" - 11 UNC		1.000	25.40	
1 1/4	31.75	15/16" - 10 UNS	RQLS	1.187	30.18	
1 1/2	38.10					
1 3/4	44.45	1 1/16" - 10 UNS	RQLS and RQLD	1.375	34.93	
1 7/8	47.63					
2	50.80			RQLD	1.750	44.45
2 1/8	53.98					
2 1/4	57.15					
2 1/2	63.50	1 9/16" - 10 UNS		2.313	58.75	

QLS - QUICK LOCK SYSTEM

RQLS - Single Shoulder, Light Duty

RQLD - Double Shoulder, Heavy Duty



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Product Code: 100

Rebco ROPE SOCKETS provide means for connecting the Wireline to the Tool String.

Rebco offers variety of Rope Socket Types (Table - Availability), for specific applications and Wire types.

Alloy Material is used to manufacture **Rebco ROPE SOCKETS**. Materials suitable for specific well conditions are available.

Type of Rope Sockets: Availability Table

Thread	TYPE		ASSEMBLY PART NUMBER	DESCRIPTION	WIRE TYPE				
	QLS *				Single Strand	Multi Strand	Single Conductor	Swabbing	Capsulated Line
	Single	Double							
		'AD'	1000003-	Spring, Disc, Support	X	None			
	'AS'		1000014-						
	'AO'		1000020-						
		'BD'	1000103-	Cone and Sleeve	X	None			
	'BS'		1000114-						
	'BO'		1000120-						
		'CD'	1000203-	Releasing Slips	None	X	None		
	'CS'		1000214-						
	'CO'		1000220-						
		'CGD'	100020503-	Releasing Slips with Swivel Bottom	None	X	None		
	'CGS'		100020514-						
	'CGO'		100020520-						
	'D'		10003-	Dummy	N/A				
	'DS'		1000314-						
		'DD'	1000303-						
	'GO'		1000520-	Single Conductor	None		X	None	
		'HD'	1000603-	Heavy Duty	X	X	None		
	'HS'		1000614-						
	'HO'		1000620-						
	'RC'		1001302-	Clamp	X	X	None		X
	'SA'		1001400-	1/2" to 9/16" Line	None			X	None
		'SD'	1001403-						
	'SS'		1001414-						

*QLS - Quick Lock System

'RQLS' Single

'RQLD' Double, Heavy Duty

X - Available

Note: When ordering, specify **Wire Type** and **Size**, and Material required if critical.

WIRE SIZE SELECTION TABLE:

WIRE SIZE	
'A'	Decimal
0	.105" - .108"
1	.140"
2	.160"
3	.150"
4	.187" (3/16")
5	.218" (7/32")

WIRE SIZE	
'A'	Decimal
6	.250" (1/4")
7	.312" (5/16")
8	.092"
9	.125"
10	Blank
11	.062" - .082"



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Type 'AO' Rope Sockets: 3/8" - 2 1/2"

Rebco Type 'AO' Rope Sockets are recommended to be used with .066" to .105" diameter Single Strand Wire.

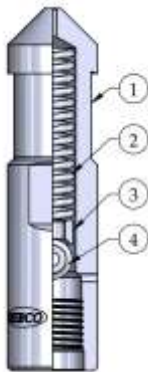
The Wireline should be passed through the Body, Spring and Support, before being wrapped tightly around the groove of the Disc.

NOMINAL SIZE	3/8"	1/2"	5/8"	3/4"	7/8"
ASSEMBLY NUMBER	10000200370	10000200500	10000200620	10000200750	10000200870

DET	PART NAME	QTY	PART NO	PART NO	PART NO	PART NO	PART NO
1	BODY	1	1000022	1000028	1000032	100001	1000029
2 *	SPRING	1	NONE	NONE	NONE	9000139	9000139
3 *	SPRING SUPPORT	1	NONE	NONE	NONE	1000011	1000011
4 *	SPOOL	1	NONE	NONE	NONE	1000010	1000010
REDRESS KIT (* Included as part of Kit)			NONE	NONE	NONE	1000020240750	1000020240875

ENGINEERING DATA:

FISHING NECK OD	.375	.500"	.500"	.687"	.750"
BOX THREAD CONNECTION	1/4" - 20	3/8" - 16	3/8" - 16	1/2" - 13	5/8" - 11
MAXIMUM OD	.38"	.50"	.63"	.75"	.88"
LENGTH	4.06"	4.50"	4.50"	3.12"	3.12"
MATERIAL	Alloy	Alloy	Alloy	Alloy	Alloy
WEIGHT lbs (kg)	.5 (.22)	.6 (.27)	.7 (.32)	1.2 (.54)	1.2 (.54)



NOMINAL SIZE	1"	1 1/4"	1 1/2"	1 3/4"	1 7/8"
ASSEMBLY NUMBER	10000201000	10000201250	10000201500	10000201750	10000201870

DET	PART NAME	QTY	PART NO	PART NO	PART NO	PART NO	PART NO
1	BODY	1	100003	100005	100006	100007	1000015
2 *	SPRING	1	9000139	9000140	9000140	9000140	9000140
3 *	SPRING SUPPORT	1	1000011	1000013	1000013	1000013	1000013
4 *	SPOOL	1	1000010	1000014	1000014	1000014	1000014
REDRESS KIT (* Included as part of Kit)			100002024100	100002024125	100002024125	100002024125	100002024125

ENGINEERING DATA:

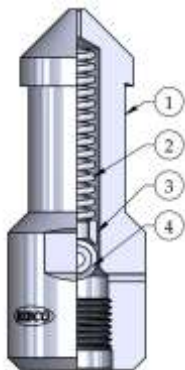
FISHING NECK OD	1.000"	1.187"	1.375"	1.750"	1.750"
BOX THREAD CONNECTION	5/8" - 11	15/16" - 10	15/16" - 10	1 1/16" - 10	1 1/16" - 10
MAXIMUM OD	1.00"	1.25"	1.38"	1.75"	1.88"
LENGTH	6.88"	5.56"	5.56"	5.56"	5.56"
MATERIAL	Alloy	Alloy	Alloy	Alloy	Alloy
WEIGHT lbs (kg)	1.2 (.54)	1.2 (.54)	1.6 (.73)	2.8 (1.27)	2.8 (1.27)

NOMINAL SIZE	2"	2 1/8"	2 1/4"	2 1/2"
ASSEMBLY NUMBER	10000202000	10000202120	10000202250	10000202500

DET	PART NAME	QTY	PART NO	PART NO	PART NO	PART NO
1	BODY	1	1000012	1000024	1000031	1000017
2 *	SPRING	1	9000140	9000140	9000140	9000140
3 *	SPRING SUPPORT	1	1000013	1000013	1000013	1000013
4 *	SPOOL	1	1000014	1000014	1000014	1000014
REDRESS KIT (* Included as part of Kit)			100002024125	100002024125	100002024125	100002024125

ENGINEERING DATA:

FISHING NECK OD	1.750"	1.750"	1.750"	2.313"
BOX THREAD CONNECTION	1 1/16" - 10	1 1/16" - 10	1 1/16" - 10	1 9/16" - 10
MAXIMUM OD	2.00"	2.12"	2.25"	2.50"
LENGTH	5.56"	5.56"	5.56"	6.50"
MATERIAL	Alloy	Alloy	Alloy	Alloy
WEIGHT lbs (kg)	3.0 (1.36)	3.4 (1.54)	4.1 (1.86)	4.9 (2.22)



Note: 3/8" and 1/2" Type 'AO' Rope Sockets are offered with Set Screws Only



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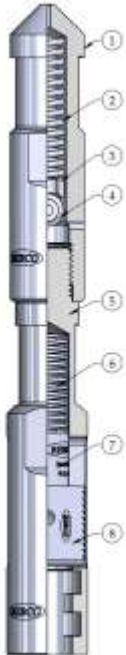
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REBCO

Type 'AD' Rope Sockets: 1 1/2" – 2 1/2"

Rebco Type 'AD' Rope Sockets are recommended to be used with .066" to .125" diameter Single Strand Wire.

Type 'AD' Rope Sockets is made up of Type 'AO' Rope Socket Assembly and 'RQLD' Bottom Sub-Assembly.



NOMINAL SIZE	1 1/2"	1 3/4"	1 7/8"
ASSEMBLY NUMBER	10000031500	10000031750	10000031870

DET	PART NAME	QTY	PART NO	PART NO	PART NO
1	BODY	1	100006	100007	1000015
2 *	SPRING	1	9000140	9000140	9000140
3 *	SPRING SUPPORT	1	1000013	1000013	1000013
4 *	SPOOL	1	1000014	1000014	1000014
REDRESS KIT (* Included as part of Kit)			100002024125	100002024125	100002024125

SUB-ASSEMBLY - 'RQLD' FEMALE			10403201500	10403201750	10403201870
5	BODY - Female	1	104031	104035	104033
6	SPRING	1	900016	900016	900016
7	GUIDE	1	1040111	1040111	1040111
8	LOCK	1	1040110	1040122	1040115

ENGINEERING DATA:

FISHING NECK OD	1.375"	1.750"	1.750"
BOX CONNECTION	'RQLD'	'RQLD'	'RQLD'
MAXIMUM OD	1.38"	1.75"	1.88"
LENGTH	12.16"	12.16"	12.16"
MATERIAL	Alloy	Alloy	Alloy
WEIGHT lbs (kg)	5.1 (2.31)	5.8 (2.63)	6.6 (2.99)



NOMINAL SIZE	2"	2 1/8"	2 1/2"
ASSEMBLY NUMBER	10000032000	10000032120	10000032500

DET	PART NAME	QTY	PART NO	PART NO	PART NO
1	BODY	1	100006	1000024	1000016
2 *	SPRING	1	9000140	9000140	9000140
3 *	SPRING SUPPORT	1	1000013	1000013	1000013
4 *	SPOOL	1	1000014	1000014	1000014
REDRESS KIT (* Included as part of Kit)			100002024125	100002024125	100002024125

SUB-ASSEMBLY - 'RQLD' FEMALE			10403202000	10403202120	10403202500
5	BODY - Female	1	1040337	1040329	1040331
6	SPRING	1	900016	900016	900016
7	GUIDE	1	1040111	1040111	1040111
8	LOCK	1	1040125	1040128	1040131

ENGINEERING DATA:

FISHING NECK OD	1.750"	1.750"	2.313"
BOX CONNECTION	'RQLD'	'RQLD'	'RQLD'
MAXIMUM OD	2.00"	2.12"	2.50"
LENGTH	12.16"	12.16"	12.16"
MATERIAL	Alloy	Alloy	Alloy
WEIGHT lbs (kg)	6.0 (2.72)	7.7 (3.49)	11.2 (5.08)



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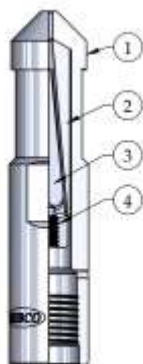
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REBCO

Type 'BO' Rope Socket Assembly: 3/4" – 2 1/2"

Rebco Type 'BO' Rope Socket (Single Strand) is used to attach the wire to the tool string.

The wire should be passed through the Body and the Sleeve, wrap the wire around the groove of the Cone; tighten the Set Screw. Draw on Wire to pull the Sleeve into the Body.



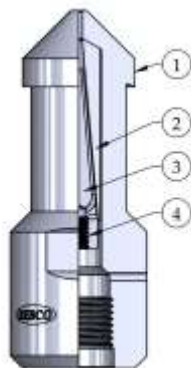
NOMINAL SIZE	3/4"	1"	1 1/4"	1 1/2"	1 3/4"
ASSEMBLY NUMBER	10001200750	10001201000	10001201250	10001201500	10001201750

DET	PART NAME	QTY	PART NO	PART NO	PART NO	PART NO	PART NO
1	BODY	1	100015	100014	100005	100006	100007
2 *	SLEEVE	1	NONE	NONE	100011	100011	100011
3 *	CONE	1	100017	100017	100012	100012	100012
4 *	SET SCREW	1	NONE	NONE	18557210312	18557210312	18557210312
REDRESS KIT (* Included as part of Kit)			1000120240750	100012024100	100012024125	100012024125	100012024125

ENGINEERING DATA:

FISHING NECK OD	.687"	1.000"	1.187"	1.375"	1.750"
BOX THREAD CONNECTION	1/2" - 13	5/8" - 11	15/16" - 10	15/16" - 10	1 1/16" - 10
MAXIMUM OD	.75"	1.00"	1.25"	1.38"	1.75"
LENGTH	3.12"	6.88"	5.56"	5.56"	5.56"
MATERIAL	Alloy	Alloy	Alloy	Alloy	Alloy
WEIGHT lbs (kg)	.8 (.36)	1.0 (.45)	1.2 (.54)	1.6 (.73)	2.8 (1.27)

NOMINAL SIZE	1 7/8"	2 1/8"	2 1/4"	2 1/2"	2 1/2"
ASSEMBLY NUMBER	10001201870	10001202120	10001202250	10001202500	10001202501



DET	PART NAME	QTY	PART NO	PART NO	PART NO	PART NO	PART NO
1	BODY	1	1000015	1000024	1000031	1000017	1000017
2 *	SLEEVE	1	100011	100011	100011	100011	100011
3 *	CONE	1	100012	100012	100012	100012	100012
4 *	SET SCREW	1	18557210312	18557210312	18557210312	18557210312	18557210312
REDRESS KIT (* Included as part of Kit)			100012024125	100012024125	100012024125	100012024125	100012024125

ENGINEERING DATA:

FISHING NECK OD	1.750"	1.750"	1.750"	2.313"	2.313"
BOX THREAD CONNECTION	1 1/16" - 10	1 1/16" - 10	1 1/16" - 10	1 9/16" - 10	1 1/16" - 10
MAXIMUM OD	1.88"	2.12"	2.25"	2.50"	2.50"
LENGTH	5.56"	5.56"	5.56"	6.50"	6.50"
MATERIAL	Alloy	Alloy	Alloy	Alloy	Alloy
WEIGHT lbs (kg)	2.8 (1.27)	3.4 (1.54)	5.8 (2.63)	6.2 (2.81)	6.2 (2.81)

Note: Specify Wire Size when ordering.
See Selection Table for Wire Sizes



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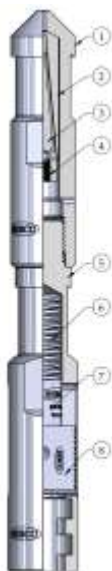
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REBCO

Type 'BD' Rope Sockets: 1 1/2" – 2 1/2"

Rebco Type 'BD' Rope Sockets are recommended to be used with up to .125" diameter Single Strand Wire.

Type 'BD' Rope Sockets is made up of Type 'BO' Rope Socket Assembly and 'RQLD' Bottom Sub-Assembly.



NOMINAL SIZE	1 1/2"	1 3/4"	1 7/8"
ASSEMBLY NUMBER	10001031500	10001031750	10001031870

DET	PART NAME	QTY	PART NO	PART NO	PART NO
1	BODY	1	100006	100007	1000015
2 *	SLEEVE	1	100011	100011	100011
3 *	CONE	1	100012	100012	100012
4 *	SET SCREW	1	18557210312	18557210312	18557210312
REDRESS KIT (* Included as part of Kit)			100012024125	100012024125	100012024125

SUB-ASSEMBLY - 'RQLD' FEMALE		10403201500	10403201750	10403201870	
5	BODY - Female	1	104031	104035	104033
6	SPRING	1	900016	900016	900016
7	GUIDE	1	1040111	1040111	1040111
8	LOCK	1	1040110	1040122	1040115

ENGINEERING DATA:

FISHING NECK OD	1.375"	1.750"	1.750"
BOX CONNECTION	'RQLD'	'RQLD'	'RQLD'
MAXIMUM OD	1.38"	1.75"	1.88"
LENGTH	12.16"	12.16"	12.16"
MATERIAL	Alloy	Alloy	Alloy
WEIGHT lbs (kg)	5.1 (2.31)	5.5 (2.49)	6.6 (2.99)



NOMINAL SIZE	2 1/8"	2 1/2"
ASSEMBLY NUMBER	10001032120	10001032500

DET	PART NAME	QTY	PART NO	PART NO
1	BODY	1	1000024	1000016
2 *	SLEEVE	1	100011	100011
3 *	CONE	1	100012	100012
4 *	SET SCREW	1	18557210312	18557210312
REDRESS KIT (* Included as part of Kit)			100012024125	100012024125

SUB-ASSEMBLY - 'RQLD' FEMALE		10403202120	10403202500	
5	BODY - Female	1	1040329	1040331
6	SPRING	1	900016	900016
7	GUIDE	1	1040111	1040111
8	LOCK	1	1040128	1040131

ENGINEERING DATA:

FISHING NECK OD	1.750"	2.313"
BOX CONNECTION	'RQLD'	'RQLD'
MAXIMUM OD	2.12"	2.50"
LENGTH	12.16"	12.16"
MATERIAL	Alloy	Alloy
WEIGHT lbs (kg)	7.5 (3.40)	12.5 (5.67)



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Type 'CO' Rope Sockets: 1 1/4" – 2 1/2"

Rebco Type 'CO' Rope Sockets are designed for use with small stranded lines, up to 5/16" diameter.

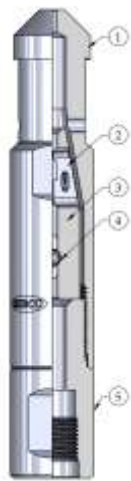
Type 'CO' Rope Sockets is made up of Body, Bottom Sub, Carriage, Slips and Set Screw.

The Slips are designed to cause the line to break under severe loading at a specific percentage of the full line tensile strength.

If during the downhole operations the Tool String gets stuck, the operator is assured that the line will break at the Rope Socket, rather than up-hole, allowing retrieval of the Wireline.

Wire Size and Slips (80 %, most common), need to be specified at the time of order.

Type 'CD' Rope Sockets are available - with 'QLS' Rebco 'RQLD' bottom connection.



NOMINAL SIZE	1 1/4"	1 1/2"	1 3/4"
ASSEMBLY NUMBER *	1000220125	1000220150	1000220175

DET	PART NAME	QTY	PART NO	PART NO	PART NO
1	BODY	1	1000211	100021	1000212
2 *	SLIPS (80 %)	2	100025	100025	100025
3 *	CARRIAGE	1	100026	100026	100026
4 *	SET SCREW	1	18557210250	18557210312	18557210312
5	BOTTOM SUB	1	1000215	100027	1000216
REDRESS KIT (* Included as part of Kit)			100012024125	100012024150	100012024175

ENGINEERING DATA:

FISHING NECK OD	1.375"	1.375"	1.750"
BOX CONNECTION	15/16" - 10	15/16" - 10	1 1/16" - 10
MAXIMUM OD	1.25"	1.50"	1.75"
LENGTH	8.50"	8.50"	8.50"
MATERIAL	Alloy	Alloy	Alloy
WEIGHT lbs (kg)	3.6 (1.63)	4.0 (1.81)	4.7 (2.13)

* Assembly Number is determined by Wire Size, See Wire Size Chart



NOMINAL SIZE	1 7/8"	2 1/8"	2 1/2"
ASSEMBLY NUMBER *	1000220187	1000220212	1000220250

DET	PART NAME	QTY	PART NO	PART NO	PART NO
1	BODY	1	100022	100023	100024
2 *	SLIPS (80 %)	2	100025	100025	1000213
3 *	CARRIAGE	1	100026	100026	1000214
4 *	SET SCREW	1	18557210312	18557210312	18557210312
5	BOTTOM SUB	1	100028	100029	1000210
REDRESS KIT (* Included as part of Kit)			100012024187	100012024212	100012024250

ENGINEERING DATA:

FISHING NECK OD	1.750"	1.750"	2.313"
BOX CONNECTION	1 1/16" - 10	1 1/16" - 10	1 1/16" - 10
MAXIMUM OD	1.88"	2.12"	2.50"
LENGTH	8.50"	8.50"	8.50"
MATERIAL	Alloy	Alloy	Alloy
WEIGHT lbs (kg)	4.8 (2.18)	5.9 (2.68)	10.3 (4.67)

* Assembly Number is determined by Wire Size, See Wire Size Chart



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REBCO

Type 'CGO' Rope Socket Assembly: 1 1/2" - 1 7/8"

Rebco Type 'CGO' Rope Sockets are designed for use with small stranded lines, up to 1/4" diameter. Similar in design as Rebco Type 'CO' Rope Sockets, the Tool has an additional swivel bottom.

Type 'D' Dummy Rope Socket Assembly: 1 1/4" - 2 1/2"

Rebco Type 'D' Dummy Rope Sockets are available with threaded or QLS Connections.

The advantage of this tool is that it can be attached to other types of tools with Pin connection for variety of Wireline applications.



NOM SIZE	CONNECTION				ENGINEERING			
	THREADED	PART NUMBER	QLS	PART NUMBER	LENGTH		MAX OD	FN
					THREAD	QLS		
1 1/4"	15/16" - 10	100035	'RQLS'	10003145	5.56"	6.6"	1.25"	1.187"
1 1/2"	15/16" - 10	100036	'RQLD'	10003036	5.56"	6.6"	1.50"	1.375"
1 3/4"	1 1/16" - 10	100037	'RQLD'	10003037	5.56"	6.6"	1.75"	1.750"
1 7/8"	1 1/16" - 10	1000315	'RQLD'	100030315	5.56"	6.6"	1.88"	1.750"
2 1/8"	1 1/16" - 10	1000324	'RQLD'	100030324	5.56"	6.6"	2.12"	1.750"
2 1/2"	1 9/16" - 10	1000325	'RQLD'	100030325	6.50"	6.6"	2.50"	2.313"

Sizes not listed are available.

Additional Types of Rope Sockets available:

Type 'GO' Rope Socket Assembly: 1000520_ Single Conductor Cable Head

Type 'RC' Rope Socket Assembly: 1001302_ For Capsulated Line

Type 'SA' Rope Socket Assembly: 1001400_ Swabbing Rope Sockets for Babbitt fill





SECTION I: TOOL STRING

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JP042613

REBCO

Type 'HO' Heavy Duty Rope Socket Assembly – Threaded Connection: 1 1/2" – 2 1/2"

Rebco Type 'HO' and Type 'HD' Heavy Duty Rope Socket is designed for heavy duty Wireline work.

The wire should be passed through the Body and the Clamp Sub Assembly. The unique design will trap the Wire; held in place with Socket Screws.

The diameter of the Wire to be used determines the Assembly Number. To select the Wire Diameter, see the Selection Table.



NOMINAL SIZE	1 1/2"	1 3/4"	1 7/8"	2 1/8"	2 1/2"
ASSEMBLY NUMBER	10006201500	10006201750	10006201870	10006202120	10006202500

DET	PART NAME	QTY	PART NO	PART NO	PART NO	PART NO	PART NO
1	BODY	1	100061500	100061750	100061870	100062120	100062500
2 *	CLAMP SUB-ASSEMBLY	1	10006141500	10006141750	10006141870	10006142120	10006142500
3	BOTTOM SUB	1	100064	100065	100063	100062	100061
REDRESS KIT (* Included as part of Kit)			100062024150	100062024175	100062024187	100062024212	100062024250

ENGINEERING DATA:

MAXIMUM OD	1.50"	1.75"	1.88"	2.12"	2.50"
FISHING NECK OD	1.375"	1.750"	1.750"	1.750"	2.313"
LENGTH	13.1"	14.75"	14.75"	14.75"	14.75"
BOTTOM CONNECTION	15/16" - 10	1 1/16" - 10	1 1/16" - 10	1 1/16" - 10	1 1/16" - 10
MATERIAL	Alloy	Alloy	Alloy	Alloy	Alloy
WEIGHT lbs (kg)	5.7 (2.60)	9.7 (4.4)	9.9 (4.50)	11.7 (5.31)	13.8 (6.26)

Type 'HD' Heavy Duty Rope Socket Assembly – 'QLS' Connection: 1 1/2" – 2 1/2"

Rebco Type 'HD' Heavy Duty Rope Socket is with 'RQLD' Bottom Sub.



NOMINAL SIZE	1 1/2"	1 3/4"	1 7/8"	2 1/8"	2 1/2"
ASSEMBLY NUMBER	10006031500	10006031750	10006031870	10006032120	10006032500

DET	PART NAME	QTY	PART NO	PART NO	PART NO	PART NO	PART NO
1	BODY	1	100061500	100061750	100061870	100062120	100062500
2 *	CLAMP SUB-ASSEMBLY	1	10006141500	10006141750	10006141870	10006142120	10006142500
BOTTOM SUB SUB-ASSEMBLY			10006031500	10006031750	10006031870	10006032120	10006032500
3	BOTTOM SUB	1	10006034	10006035	10006033	10006032	10006031
4	SPRING	1	900016	900016	900016	900016	900016
5	GUIDE	1	1040111	1040111	1040111	1040111	1040111
6	LOCK	1	1040110	1040122	1040115	1040128	1040131
REDRESS KIT (* Included as part of Kit)			100062024150	100062024175	100062024187	100062024212	100062024250

ENGINEERING DATA:

MAXIMUM OD	1.50"	1.75"	1.88"	2.12"	2.50"
FISHING NECK OD	1.375"	1.750"	1.750"	1.750"	2.313"
LENGTH	17.45"	19.1"	19.1"	19.1"	19.1"
BOTTOM CONNECTION	'RQLD'	'RQLD'	'RQLD'	'RQLD'	'RQLD'
MATERIAL	Alloy	Alloy	Alloy	Alloy	Alloy
WEIGHT lbs (kg)	8.6 (3.76)	13.6 (6.17)	13.6 (6.17)	15.7 (7.12)	19.3 (8.75)



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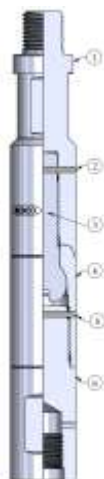
REBCO

Product Code: 104

Type 'HO' Swivel Joint Assembly: 1" - 2 1/2"

Rebco Type 'HO' Swivel Joint was designed to minimize the twisting of the Wireline when running the Tools down hole.

Type 'HO' Swivel Joint is with Threaded Connection.



NOMINAL SIZE	1"	1 1/4"	1 1/2"	1 3/4"	1 7/8"
ASSEMBLY NUMBER	10406201000	10406201250	10406201500	10406201750	10406201870

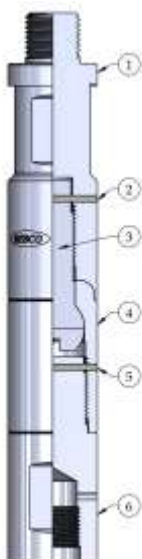
DET	PART NAME	QTY	PART NO	PART NO	PART NO	PART NO	PART NO
1	TOP SUB	1	104063	104062	104061	104064	104065
2 *	PIN	1	18810210001	18810212501	18810215001	18810217501	18810218701
3	BALL CONNECTOR	1	1040610	1040611	1040612	1040613	1040613
4	BALL SUB	1	1040622	1040621	1040620	1040619	1040629
5 *	PIN	1	18810210001	18810212501	18810212501	18810217501	18810218701
6	BOTTOM SUB	1	1040623	1040624	1040625	1040618	1040626
REDRESS KIT (* Included as part of Kit)			104062024100	104062024125	104060324150	104060324175	104060324188

ENGINEERING DATA:

FISHING NECK OD	.750"	1.187"	1.375"	1.750"	1.750"
PIN-BOX THREAD CONNECTION	5/8" - 11	15/16" - 10	15/16" - 10	1 1/16" - 10	1 1/16" - 10
MAXIMUM OD	1.00"	1.25"	1.50"	1.75"	1.88"
LENGTH	6.46"	10.88"	10.88"	10.85"	10.85"
MATERIAL	Alloy	Alloy	Alloy	Alloy	Alloy
WEIGHT lbs (kg)	.9 (.41)	4.0 (1.81)	4.3 (1.95)	7.3 (3.31)	7.5 (3.45)

ACCESSORY

WRENCH for BALL CONNECTOR	1670011	1670010	1670010	1670010	1670010
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NOMINAL SIZE	2"	2 1/8"	2 1/2"	2 1/2"
ASSEMBLY NUMBER	10406202000	10406202120	10406202500	10406202501

DET	PART NAME	QTY	PART NO	PART NO	PART NO	PART NO
1	TOP SUB	1	104066	104067	104068	104069
2 *	PIN	1	18810220001	18810221251	18810325001	18810325001
3	BALL CONNECTOR	1	1040613	1040613	1040614	1040614
4	BALL SUB	1	1040630	1040631	1040615	1040615
5 *	PIN	1	18810220001	18810221251	18810325001	18810325001
6	BOTTOM SUB	1	1040627	1040628	1040616	1040617
REDRESS KIT (* Included as part of Kit)			104060324200	104060324212	104060324250	104060324250

ENGINEERING DATA:

FISHING NECK OD	1.750"	1.750"	2.313"	2.313"
PIN-BOX THREAD CONNECTION	1 1/16" - 10	1 1/16" - 10	1 1/16" - 10	1 9/16" - 10
MAXIMUM OD	2.00"	2.12"	2.50"	2.50"
LENGTH	10.85"	10.85"	11.25"	11.25"
MATERIAL	Alloy	Alloy	Alloy	Alloy
WEIGHT lbs (kg)	7.9 (3.58)	8.4 (3.81)	10.3 (4.67)	10.1 (4.58)

ACCESSORY

WRENCH for BALL CONNECTOR	1670010	1670010	1670010	1670010
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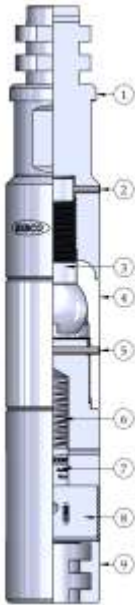
JP042613

REBCO

Type 'HD' Swivel Joint Assembly: 1 1/2" – 2 1/2"

Rebco Type 'HD' Swivel Joint was designed to minimize the twisting of the Wireline when running the Tools down hole.

Type 'HD' Swivel Joint is with 'QLS' - 'RQLD' Connection.



NOMINAL SIZE	1 1/2"	1 3/4"	1 7/8"	2 1/8"	2 1/2"
ASSEMBLY NUMBER	10406031500	10406031750	10406031870	10406032120	10406032500

DET	PART NAME	QTY	PART NO	PART NO	PART NO	PART NO	PART NO
1	TOP SUB	1	10406035	10406031	10406032	10406034	104060330
2 *	PIN	1	18810215001	18810217501	18810218751	18810221251	18810225001
3	BALL CONNECTOR	1	1040612	1040613	1040613	1040613	1040614
4	BALL SUB	1	1040620	1040619	1040629	1040631	1040615
5 *	PIN	1	18810215001	18810217501	18810218751	18810221251	18810225001
BOTTOM SUB SUB-ASSEMBLY			10406031500	10406031750	10406031870	10406032120	10406032500
6	SPRING	1	900016	900016	900016	900016	900016
7	GUIDE	1	1040111	1040111	1040111	1040111	1040111
8	LOCK	1	1040110	1040122	1040115	1040128	1040131
9	BOTTOM SUB	1	10406036	104060316	104060317	104060319	104060333
REDRESS KIT (* Included as part of Kit)			104060324150	104060324175	104060324188	104060324212	104060324250

ENGINEERING DATA:

	1 1/2"	1 3/4"	1 7/8"	2 1/8"	2 1/2"
FISHING NECK OD	1.375"	1.750"	1.750"	1.750"	2.313"
'QLS' CONNECTION	'RQLD'	'RQLD'	'RQLD'	'RQLD'	'RQLD'
MAXIMUM OD	1.50"	1.75"	1.88"	2.12"	2.50"
LENGTH	14.53"	14.75"	14.75"	14.75"	16.5"
MATERIAL	Alloy	Alloy	Alloy	Alloy	Alloy
WEIGHT lbs (kg)	5.6 (2.54)	8.0 (3.63)	8.2 (3.72)	10.2 (4.65)	17.2 (7.80)

ACCESSORY

WRENCH for BALL CONNECTOR	1670011	1670010	1670010	1670010	1670010



ACCESSORY: Wrench for the Ball Connector

See **PRODUCT CODE 167**



SECTION I: TOOL STRING

2013

JP042613

REBCO

Product Code: 101

Rebco STEMS (Weight Bar): provide added weight to the Wireline Tool String, to counteract the wellbore pressure and effectiveness of the impact delivered by Jars (**Product Code 102**).

Rebco offers variety of Stem Types (Table - Availability), for specific applications.

Alloy Material is used to manufacture **Rebco STEMS**. Materials suitable for specific Well conditions are available.

Type of STEMS: Availability Table

Thread	TYPE		ASSEMBLY PART NUMBER	DESCRIPTION
	QLS *			
	Single	Double		
		'AD'	1010003-	Solid Bar
'A'	'AS'		1010014-	
			10100-	Lead Filled
		'BD'	1010103-	
	'BS'		1010114-	Roller Stem
'BO'			1010120-	
		'ED'	1010203-	Tungsten Filled
	'ES'		1010214-	
'EO'			1010220-	
		'TD'	1011503-	
	'TS'		1011514-	
'TO'			1011520-	

- QLS - Quick Lock System
- 'RQLS' Single Shoulder
 - 'RQLD' Double Shoulder, Heavy Duty

Rebco - Helpful Hint: How to determine the amount of Stem Weight needed?

EXAMPLE: 1 1/2" Diameter Stem

As a general "*Rule of thumb*" a minimum of five (5 ft.) of Stem (29.2 lbs) is used for pressure of 1,000 psi and less. Use an additional two (2 ft.) of Stem (11.0 lbs) for each additional 1,000 psi of well pressure.

FORMULA: Reasonably accurate for determining the weight per FOOT of given

- a) Stem size is: $\frac{D^2 \times L \times 8}{3} = \text{lbs/ft.}$
- b) Weight in lbs/ft. = $10.68r^2$
 - r^2 is the radius of the bar in inches
 - the density of steel is taken as 490.06 lbs/cu. ft.
 - To convert from lbs/ft. to kg/m multiply by 1.487

Density/Weight Comparison of Metals used to manufacture Stem

METAL	Density Lbs/ft ³	WEIGHT		Example 1 1/2" X 5 ft.
		Kgs/m ³	Lbs/ft ³	
Steel	490.06	7,850	489.84	29.2 lbs
Lead Fill	708	11,340	707.62	35.8 lbs
Tungsten Fill	976	19,600	1,223.04	58.15 lbs



SECTION I: TOOL STRING

2013

JP042613

REBCO

Type 'A' Stem (Weight Bar): 3/8" – 2 1/2"

Rebco Type 'A' Solid Bar Stems are with Threaded Connections – (1 1/4" - 2 1/2" Sucker Rod Type)
3/8" and 1/2" Diameter Stem is used for Velocity String Type completions

Note: All *Rebco* Tools have machined Flats for safer use.



ASSEMBLY PART NUMBER	NOMINAL SIZE (OD)	ENGINEERING DATA			
		LENGTH	THREAD CONNECTIONS	FISHING NECK	WEIGHT lbs (kgs)
101000372	3/8"	24"	1/4" - 20 UNC	None	.75 (.34)
101000373		36"			1.13 (.51)
101000375		60"			1.18 (.85)
101000502	1/2"	24"	3/8" - 16 UNC	None	.67 (.34)
101000503		36"			2.01 (.91)
101000505		60"			3.35 (1.52)
101000752	3/4"	24"	1/2" - 13 UNC	.687"	3.0 (1.36)
101000753		36"			2.01 (.91)
101000755		60"			3.35 (1.52)
101001002	1"	24"	5/8" - 11 UNC	.750"	5.3 (2.42)
101001003		36"			7.8 (3.54)
101001005		60"			12.0 (5.44)
101001252	1 1/4"	24"	15/16" - 10 UNS	1.187"	7.8 (3.54)
101001253		36"			12.0 (5.44)
101001255		60"			20.4 (9.25)
101001502	1 1/2"	24"	15/16" - 10 UNS	1.375"	11.0 (4.99)
101001503		36"			17.0 (7.71)
101001505		60"			29.2 (13.24)
101001752	1 3/4"	24"	1 1/16" - 10 UNS	1.750"	17.5 (7.94)
101001753		36"			26.8 (12.16)
101001755		60"			46.0 (20.87)
101001872	1 7/8"	24"	1 1/16" - 10 UNS	1.750"	18.8 (8.52)
101001873		36"			28.2 (12.78)
101001875		60"			47.0 (21.29)
101002122	2 1/8"	24"	1 1/16" - 10 UNS	2.313"	24.1 (10.94)
101002123		36"			36.2 (16.41)
101002125		60"			53.4 (24.22)
101002502	2 1/2"	24"	1 9/16" - 10 UNS	2.313"	33.4 (15.14)
101002503		36"			50.1 (22.71)
101002505		60"			83.5 (37.85)
101002512		24"			33.4 (15.14)
101002513		36"			50.1 (22.71)
101002515		60"			83.5 (37.85)

Alloy material is used to manufacture *Rebco* Stems; for severe conditions more suitable materials are available.



SECTION I: TOOL STRING

2013

JP042613

REBCO

Type 'AD' Stem (Weight Bar): 1 1/2" – 2 1/2"

Rebco Type 'AD' Stems are with integral QLS (Quick Lock System) Connections - Rebco Type 'RQLD'



ASSEMBLY PART NUMBER	NOMINAL SIZE (OD)	ENGINEERING DATA						
		LENGTH	'QLS' CONNECTIONS	FISHING NECK	WEIGHT lbs (kgs)			
10100031502	1 1/2"	24"	'RQLD'	1.375"	11.0 (4.99)			
10100031503		36"			17.0 (7.71)			
10100031505		60"			29.2 (13.24)			
10100031752	1 3/4"	24"		'RQLD'	1.750"	17.5 (7.94)		
10100031753		36"				26.8 (12.16)		
10100031755		60"				46.0 (20.87)		
10100031872	1 7/8"	24"				1.750"	18.8 (8.52)	
10100031873		36"					28.2 (12.78)	
10100031875		60"					47.0 (21.29)	
10100032122	2 1/8"	24"			'RQLD'		2.313"	24.1 (10.94)
10100032123		36"						36.2 (16.41)
10100032125		60"						53.4 (24.22)
10100032502	2 1/2"	24"	2.313"			28.2 (12.80)		
10100032503		36"				44.8 (20.35)		
10100032505		60"				78.1 (35.40)		

Parts: To service integral 'QLS' Connections
- Rebco Type 'RQLS' and 'RQLD'

QLS SIZE	PART NAME		
	SPRING	GUIDE	LOCK
	PART NUMBER	PART NUMBER	PART NUMBER
1 1/4"	9000191	104014	104015
1 1/2"	900016	1040111	1040110
1 3/4"			1040122
1 7/8"			1040115
2 1/8"			1040128
2 1/2"			1040131

ACCESSORIES: Useful Tools to service integral 'QLS' Connections
- Rebco Type 'RQLS' and 'RQLD'

QLS SIZE	DESCRIPTION			
	INSTALLATION TOOL		RELEASE TOOL	
1 1/4"	PART NUMBER	1040142	PART NUMBER	1040119
1 1/2" – 2 1/8"		1040118		
2 1/2"		104011		

For more detailed description of QLS see SECTION VII.



SECTION I: TOOL STRING

2013

JP042613

REBCO

Type 'BO' Lead Filled Stem (Weight Bar): **1 1/4" – 2 1/2"**

Rebco Type 'BO' Lead Filled Stems are with Threaded Connections – (Sucker Rod Type)



ASSEMBLY PART NUMBER	NOMINAL SIZE (OD)	ENGINEERING DATA				
		LENGTH	THREAD CONNECTIONS	FISHING NECK	WEIGHT lbs (kgs)	
10101201252	1 1/4"	24"	15/16" - 10	1.187"	12.6 (5.72)	
10101201253		36"			20.2 (9.16)	
10101201255		60"			25.4 (5.72)	
10101201502	1 1/2"	24"		1.375"	12.6 (4.99)	
10101201503		36"			20.2 (9.16)	
10101201505		60"			35.8 (16.24)	
10101201752	1 3/4"	24"	1 1/16" - 10		1.750"	18.0 (8.16)
10101201753		36"				29.6 (13.43)
10101201755		60"				53.0 (24.04)
10101201872	1 7/8"	24"		1 1/16" - 10	1.750"	20.0 (9.07)
10101201873		36"				31.6 (14.33)
10101201875		60"				55.0 (24.95)
10101202122	2 1/8"	24"	1 9/16" - 10		2.313"	31.0 (14.06)
10101202123		36"				34.0 (15.42)
10101202125		60"				63.0 (28.58)
10101202502	2 1/2"	24"		1 9/16" - 10	2.313"	41.0 (18.6)
10101202503		36"				61.5 (27.9)
10101202505		60"				102.5 (46.49)
10101202512		24"	41.3 (18.7)			
10101202513		36"	61.8 (28.0)			
10101202515		60"	102.8 (46.6)			

Type 'BD' Lead Filled Stem (Weight Bar): **1 1/2" – 2 1/2"**

Rebco Type 'BD' Lead Filled Stems are with integral QLS (Quick Lock System)
- Rebco Type 'RQLD'



ASSEMBLY PART NUMBER	NOMINAL SIZE (OD)	ENGINEERING DATA				
		LENGTH	'QLS' CONNECTIONS	FISHING NECK	WEIGHT lbs (kgs)	
10101031502	1 1/2"	24"	'RQLD'	1.375"	14.6 (6.62)	
10101031503		36"			22.2 (10.07)	
10101031505		60"			37.8 (17.15)	
10101031752	1 3/4"	24"		1.750"	2.313"	20.0 (9.07)
10101031753		36"				31.6 (14.33)
10101031755		60"				55.0 (24.95)
10101031872	1 7/8"	24"	1.750"		2.313"	22.1 (10.02)
10101031873		36"				33.7 (15.29)
10101031875		60"				57.1 (25.9)
10101032122	2 1/8"	24"		1.750"	2.313"	34.29 (15.55)
10101032123		36"				37.8 (17.15)
10101032125		60"				66.6 (30.21)
10101032502	2 1/2"	24"	1.750"		2.313"	46.0 (20.87)
10101032503		36"				66.5 (30.16)
10101032505		60"				107.5 (48.76)



SECTION I: TOOL STRING

2013

JP042613

REBCO

Type 'EO' Roller Stem (Weight Bar): **1 1/4" – 2 1/2"**

Rebco Type 'EO' Roller Stems are with Threaded Connections – (Sucker Rod Type)



ASSEMBLY PART NUMBER	NOMINAL SIZE (OD)	ENGINEERING DATA							
		LENGTH	THREAD CONNECTIONS	FISHING NECK	NO * ROLLERS	ROLLER OD *			
10104201252	1 1/4"	24"	15/16" - 10	1.187"	2	1.50"			
10104201253		36"			3				
10104201255		60"			4				
10104201502	1 1/2"	24"		1 1/16" - 10	1.375"	2	1.75"		
10104201503		36"				3			
10104201505		60"				4			
10104201752	1 3/4"	24"	1 1/16" - 10		1.750"	2	2.20"		
10104201753		36"				3			
10104201755		60"				4			
10104201872	1 7/8"	24"		2		3		2.75"	
10104201873		36"							3
10104201875		60"							4
10104202122	2 1/8"	24"	2	3	2.75"				
10104202123		36"				3			
10104202125		60"				4			
10104202502	2 1/2"	24"		2	3	3.25"			
10104202503		36"					3		
10104202505		60"					4		

Type 'ED' Roller Stem (Weight Bar): **1 1/2" – 2 1/2"**

Rebco Type 'ED' Roller Stems are with integral QLS (Quick Lock System)

- Rebco Type 'RQLD'

ASSEMBLY PART NUMBER	NOMINAL SIZE (OD)	ENGINEERING DATA							
		LENGTH	'QLS' CONNECTIONS	FISHING NECK	NO * ROLLERS	ROLLER OD *			
10104031502	1 1/2"	24"	'RQLD'	1.375"	2	1.75"			
10104031503		36"			3				
10104031505		60"			4				
10104031752	1 3/4"	24"		1.750"	2.313"	2	2.20"		
10104031753		36"				3			
10104031755		60"				4			
10104031872	1 7/8"	24"	2			3		2.75"	
10104031873		36"							3
10104031875		60"							4
10104032122	2 1/8"	24"	2	3	2.75"				
10104032123		36"				3			
10104032125		60"				4			
10104032502	2 1/2"	24"		2	3	3.25"			
10104032503		36"					3		
10104032505		60"					4		

* Material, OD of Rollers, No. of Rollers and Configuration can be changed to suit. Please specify





SECTION I: TOOL STRING

2013

JP042613

REBCO

Type 'TO' Tungsten Filled Stem (Weight Bar): 1 1/4" – 2 1/2"

Rebco Type 'TO' Tungsten Filled Stems are with Threaded Connections – (Sucker Rod Type)



ASSEMBLY PART NUMBER	NOMINAL SIZE (OD)	ENGINEERING DATA				
		LENGTH	THREAD CONNECTIONS	FISHING NECK	WEIGHT lbs (kgs)	
10115201252	1 1/4"	24"	15/16" - 10	1.187"	15.4 (7.05)	
10115201253		36"			23.9 (10.85)	
10115201255		60"			40.63 (18.43)	
10115201502	1 1/2"	24"		1 1/16" - 10	1.375"	21.91 (9.94)
10115201503		36"				33.86 (15.36)
10115201505		60"				58.15 (26.38)
10115201752	1 3/4"	24"	1 1/16" - 10		1.750"	34.85 (15.81)
10115201753		36"				53.37 (24.21)
10115201755		60"				91.61 (41.56)
10115201872	1 7/8"	24"		1 1/16" - 10	1.750"	37.44 (16.98)
10115201873		36"				56.16 (25.48)
10115201875		60"				93.61 (42.46)
10115202122	2 1/8"	24"	1 9/16" - 10		2.313"	48 (21.77)
10115202123		36"				72.1 (32.7)
10115202125		60"				93.61 (42.46)
10115202502	2 1/2"	24"		1 9/16" - 10	2.313"	66.52 (30.17)
10115202503		36"				99.78 (45.26)
10115202505		60"				166.3 (75.43)
10115202512		24"	66.52 (30.17)			
10115202513		36"	99.78 (45.26)			
10115202515	60"	167 (75.74)				

Type 'TD' Tungsten Filled Stem (Weight Bar): 1 1/2" – 2 1/2"

Rebco Type 'TD' Tungsten Filled Stems are with QLS (Quick Lock System)
- Rebco Type 'RQLD'



ASSEMBLY PART NUMBER	NOMINAL SIZE (OD)	ENGINEERING DATA				
		LENGTH	'QLS' CONNECTIONS	FISHING NECK	WEIGHT lbs (kgs)	
10115031502	1 1/2"	24"	'RQLD'	1.375"	21.91 (9.94)	
10115031503		36"			33.86 (15.36)	
10115031505		60"			58.15 (26.38)	
10115031752	1 3/4"	24"		'RQLD'	1.750"	34.85 (15.81)
10115031753		36"				53.37 (24.21)
10115031755		60"				91.61 (41.56)
10115031872	1 7/8"	24"	'RQLD'		1.750"	37.44 (16.98)
10115031873		36"				56.16 (25.48)
10115031875		60"				93.61 (42.46)
10115032122	2 1/8"	24"		'RQLD'	2.313"	48 (21.77)
10115032123		36"				72.1 (32.7)
10115032125		60"				93.61 (42.46)
10115032502	2 1/2"	24"	1 9/16" - 10		2.313"	66.52 (30.17)
10115032503		36"				99.78 (45.26)
10115032505		60"				166.3 (75.43)



SECTION I: TOOL STRING

2013

JP042613

REBCO

Product Code: 102

Rebco JARS are the main work Tools of a Wireline Tool String; it is through their proper manipulation that all wire line sub-surface operations are possible.

Type 'AO', 'AD' and 'AS' Link Jar Assembly: 3/4" – 2 1/2"

- Rebco offers three types of Link Jars:
1. Type 'AO' - Threaded Connections
 2. Type 'AD' - 'QLS' Connections with 'RQLD'
 3. Type 'AS' - QLS' Connections with 'RQLS'

Link Jars consist of two interlocking steel links with a Fishing Neck and Pin-Box connection. The interlocking steel links can be extended or collapsed by manipulating the Wireline at the surface to produce upward or downward jarring. The intensity of jarring impact depends on the weight of the Wireline Stem (PRODUCT CODE 101) installed above the Jar, and the stroke of the Jar as well as the wellbore conditions.



MAX OD	STROKE	ASSEMBLY NO		FN OD	CONNECTION		LENGTH		WEIGHT Lbs (kgs)	
		THREADED	'QLS'		THREAD	'QLS'	CLOSED	OPEN		
3/4"	6.0"	10200200756	NONE	.687"	1/2" - 13	NONE	14.0"	26.0"	3.3 (1.50)	
	10.0"	10200200751					18.0"	38.0"	4.5 (2.04)	
1"	7.0"	10200201007	NONE	1.000"	5/8" - 11	NONE	14.2"	28.5"	8.0 (3.63)	
	10.0"	10200201001					18.2"	38.4"	8.8 (3.99)	
	14.0"	10200201014					26.0"	42.0"	15.6 (7.08)	
1 1/4"	20.0"	10200201252	10200141252	1.187"	15/16" - 10	'RQLS'	43.54"	62.87"	16.4 (7.44)	
	30.0"	10200201253	10200141253				53.54"	82.87"	20.0 (9.07)	
1 1/2"	20.0"	10200201502	10200031502	1.375"	15/16" - 10	'RQLD'	43.54"	62.87"	17.6 (8.0)	
	30.0"	10200201503	10200031503				53.54"	82.87"	21.2 (9.6)	
1 3/4"	20.0"	10200201752	10200031752	1.750"	1 1/16" - 10	'RQLD'	43.50"	62.74"	29.2 (13.24)	
	30.0"	10200201753	10200031753				53.50"	82.74"	34.0 (16.60)	
1 7/8"	20.0"	10200201872	10200031872	1.750"	1 1/16" - 10	'RQLD'	43.50"	62.74"	29.4 (13.35)	
	30.0"	10200201873	10200031873				53.50"	82.74"	34.0 (15.4)	
2 1/8"	20.0"	10200202122	10200032122	1.750"	1 1/16" - 10	'RQLD'	43.54"	62.63"	33.0 (14.99)	
	30.0"	10200202123	10200032123				53.54"	82.63"	43.3 (19.65)	
2 1/2"	20.0"	10200202502	10200032502	2.313"	1 1/16" - 10	'RQLD'	45.50"	62.49"	51.7 (23.45)	
		10200202512								1 9/16" - 10
	30.0"	10200202503	10200032503			1 1/16" - 10	'RQLD'	55.50"	82.49"	
		10200202513								1 9/16" - 10

Parts: To service integral QLS Connections
- Rebco Type 'RQLS' and 'RQLD'

QLS SIZE	PART NAME		
	SPRING - 1	GUIDE - 2	LOCK - 3
	PART NUMBER	PART NUMBER	PART NUMBER
1 1/4"	9000191	104014	104015
1 1/2"	900016	1040111	1040110
1 3/4"			1040122
1 7/8"			1040115
2 1/8"			1040128
2 1/2"			1040131



SECTION I: TOOL STRING

2013

JP042613

REBCO

Type 'BO' and 'BD' Hydraulic Jar Assembly: 1 1/4" – 2 1/8"

Rebco Hydraulic Jar is used to apply high impact force. The closed hydraulic system within the jar makes it possible for the jarring impact to be controlled. The intensity of the impact is proportionate to the full force on the Wireline and to the weight of Stem. To activate the jars for next jarring impact, setting down the weight of the tool string, the internal metering of the hydraulic fluid sets the jars for activating force.



Hydraulic fluid can be substituted to suit the needs of the operator; **caution:** should prevail to achieve the same end result.

Type 'BO' - Threaded Connection

NOM SIZE	ASSEMBLY NUMBER	ENGINEERING				
		MAX OD	CONNECTION	FISHING NECK	LENGTH	WEIGHT Lbs (kgs)
1 1/4"	10201201250	1.25"	15/16" - 10	1.187"	29.0"	10.0 (4.54)
1 1/2"	10201201500	1.50"	15/16" - 10	1.375"	29.5"	10.2 (4.63)
1 3/4"	10201201750	1.75"	1 1/16" - 10	1.750"	32.64"	20.0 (9.07)
1 7/8"	10201201870	1.88"				21.6 (9.8)
2 1/8"	10201202120	2.12"			36.1"	30.0 (13.61)
2 1/2"	10201202500	2.50"				1 9/16" - 10
	10201202501					

Type 'BD' - QLS Connection

NOM SIZE	ASSEMBLY NUMBER	ENGINEERING				
		MAX OD	CONNECTION	FISHING NECK	LENGTH	WEIGHT Lbs (kgs)
1 1/4"	10201141250	1.25"	'RQLS'	1.187"	30.63"	11.0 (4.99)
1 1/2"	10201031500	1.50"	'RQLD'	1.375"	31.12"	14.5 (6.58)
1 3/4"	10201031750	1.75"		1.750"	34.27"	17.5 (7.94)
1 7/8"	10201031870	1.88"				17.9 (8.12)
2 1/8"	10201032120	2.12"		37.75"	21.7 (9.84)	
2 1/2"	10201032500	2.50"			2.313"	38.38"

Type 'BO' and Type 'BD' Hydraulic Jar - Re Dress (Service) Kits:

NOM SIZE	SERVICE KIT	
	Type 'BOK'	Type 'BDK' *
1 1/4"	102012024125	102011424125
1 1/2"	102012024150	102010324150
1 3/4"	102012024175	102010324175
1 7/8"	102012024187	102010324187
2 1/8"	102012024212	102010324212
2 1/2"	102012024250	102010324250

* **NOTE:** Type 'BDK' also includes QLS Parts



SECTION I: TOOL STRING

2013

JP042613

REBCO

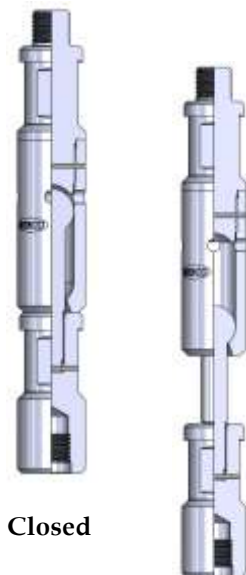
Type 'CO' and 'CD' Knuckle Jar Assembly: 1 1/4" – 2 1/2"

Rebco Knuckle Jar is similar in design to the Knuckle Joint (Product Code 103), the difference being is that the Knuckle Jar in addition to its flexibility is used as a Tubular Jar (Product Code 102).

Typically, Knuckle Jar is used with **BHP** work and light duty Wireline applications.

Rebco offers Knuckle Jars with 2", 4", 6", and 8" Stroke and double Fishing Neck.

Rebco Type 'CO' Knuckle Jar



Closed

Open

ASSEMBLY NUMBER	MAX OD	STROKE LENGTH (Inches)	ENGINEERING DATA					
			FISHING NECK	THREAD CONNECTION	LENGTH (Inches)		WEIGHT	
					Closed	Open	lbs	kgs
10202201252	1 1/4"	2	1.187"	15/16" - 10	12.8	14	3.34	1.51
10202201254		4			14.8	18	3.8	1.7
10202201256		6			16.8	22	4.42	2.0
10202201258		8			18.8	26	4.96	2.25
10202201502	1 1/2"	2	1.375"	15/16" - 10	12.25	14	4.41	2
10202201504		4			14.25	18	5.1	2.3
10202201506		6			16.37	22	5.8	2.65
10202201508		8			18.37	26	6.61	3
10202201752	1 3/4"	2	1.750"	1 1/16" - 10	12.96	14.96	7.39	3.35
10202201754		4			14.96	18.96	8.6	3.93
10202201756		6			16.96	22.96	9.4	4.3
10202201758		8			18.96	26.96	10.81	4.9
10202201872	1 7/8"	2	1.750"	1 1/16" - 10	12.96	14.96	7.39	3.35
10202201874		4			14.96	18.96	8.6	3.93
10202201876		6			16.96	22.96	9.4	4.3
10202201878		8			18.96	26.96	10.81	4.9
10202202124	2 1/8"	4	1.750"	1 1/16" - 10	14.96	18.96	9.13	4.14
10202202126		6			16.96	22.96	10.35	4.69
10202202504	2 1/2"	4	2.313"	1 1/16" - 10	15.44	19.44	10.65	4.83
10202202506		6			17.44	23.44	12.03	5.46
10202202514		4		1 9/16" - 10	15.84	19.84	10.7	4.85
10202202516		6			17.84	23.84	12.1	5.49

ASSEMBLY NUMBER	MAX OD	STROKE LENGTH (Inches)	ENGINEERING DATA					
			FISHING NECK	CONNECTION	LENGTH (Inches)		WEIGHT	
					Closed	Open	lbs	kgs
10202031504	1 1/2"	4	1.375"	'RQLD'	19.75	23.38	6.6	3
10202031506		6			21.75	27.38	7.18	3.26
10202031874	1 7/8"	4	1.750"	'RQLD'	19.75	23.75	10.6	4.8
10202031876		6			21.75	27.75	11.75	5.33
10202032124	2 1/8"	4	1.750"	'RQLD'	19.94	23.94	12.96	5.88
10202032126		6			21.94	27.94	14.26	6.47
10202032504	2 1/2"	4	2.313"	'RQLD'	20.44	24.44	20.03	9.1
10202032506		6			22.44	28.44	22	9.98

Rebco Type 'CS' Knuckle Jar with 'RQLS' connection is available

Rebco Type 'CD' Knuckle Jar





SECTION I: TOOL STRING

2013

JP042613

REBCO

Type 'DO' and 'DD' Tubular Jar Assembly: 1/2" – 2 1/2"

Rebco Tubular Jar consists of a perforated tube for fluid by-pass, and a mandrel connected to the fishing neck. A telescoping mandrel is extended or collapsed within the tube by manipulating the Wireline at the surface, thus jarring action is produced. As in Type 'AO' Link Jars, the intensity of jarring impact depends on the weight of Stem and wellbore conditions.

Rebco offers Tubular Jars with various Stroke lengths, Tool String Connections, and added feature of the double Fishing Neck.

Type 'DO' - Threaded Connection



NOM SIZE	STROKE	ASSEMBLY NUMBER	ENGINEERING					
			MAX OD	CONNECTION	FISHING NECK	LENGTH	WEIGHT Lbs (kgs)	
1/2"	6"	10203200500	.50"	3/8" - 16	NONE	13.5"	.6 (.27)	
3/4"	6.0"	10203200750	.75"	1/2" - 13	.687"	14.0"	1.2 (.54)	
	10.0"	10203200751				18.0"	1.54 (.7)	
1"	6.0"	10203201000	1.00"	5/8" - 11	.750"	14.2"	2.1 (.95)	
	10.0"	10203201001				18.0"	2.7 (1.25)	
	14.0"	10203201002				26.0"	3.9 (1.77)	
1 1/4"	20.0"	10203201252	1.25"	15/16" - 10	1.187"	32.12"	8.2 (3.70)	
	30.0"	10203201253				42.12"	10.75 (4.88)	
1 1/2"	20.0"	10203201502	1.50"	15/16" - 10	1.375"	35.48"	13.2 (6.0)	
	24.0"	10203201524				39.48"	15.8 (7.18)	
	30.0"	10203201503				45.48"	19.8 (8.98)	
1 3/4"	20.0"	10203201752	1.75"	1 1/16" - 10	1.750"	35.48"	17.0 (7.7)	
	30.0"	10203201753				45.48"	21.8 (9.90)	
1 7/8"	20.0"	10203201872	1.88"	1 1/16" - 10	1.750"	36.52"	18.8 (8.53)	
	24.0"	10203201824				40.52"	21.07 (9.56)	
	30.0"	10203201873				46.52"	24.19 (10.97)	
2 1/8"	20.0"	10203202122	2.12"	1 1/16" - 10	1.750"	43.54"	33.0 (14.99)	
	30.0"	10203202123				53.54"	43.3 (19.65)	
2 1/2"	20.0"	10203202502	2.50"	1 9/16" - 10	2.313"	34.22"	34.0 (15.42)	
		10203202512				1 1/16" - 10	44.22"	42.37 (19.40)
		10203202503				1 9/16" - 10		
		10203202513				1 9/16" - 10		



Type 'DD' - QLS Connection

NOM SIZE	STROKE	ASSEMBLY NUMBER	ENGINEERING				
			MAX OD	CONNECTION	FISHING NECK	LENGTH	WEIGHT Lbs (kgs)
1 1/4"	20.0"	10203141252	1.25"	'RQLS'	1.187"	33.88"	10.2 (4.63)
	30.0"	10203031253				43.87"	13.75 (6.24)
1 1/2"	20.0"	10203031502	1.50"	'RQLD'	1.375"	38.48"	16.2 (7.35)
	24.0"	10203031524				42.48"	18.8 (8.53)
	30.0"	10203031503				48.48"	22.8 (10.34)
1 3/4"	20.0"	10203031752	1.75"	'RQLD'	1.750"	37.23"	20.0 (9.07)
	30.0"	10203031753				47.25"	24.8 (11.25)
1 7/8"	20.0"	10203031872	1.88"	'RQLD'	1.750"	38.27"	21.8 (9.89)
	24.0"	10203031824				42.28"	24.07 (10.92)
	30.0"	10203031873				46.52"	27.19 (12.33)
2 1/8"	20.0"	10203032122	2.12"	'RQLD'	1.750"	48.27"	36.0 (16.33)
	30.0"	10203032123				55.29"	46.3 (21.0)
2 1/2"	20.0"	10203032502	2.50"	'RQLD'	2.313"	38.13"	37.4 (16.96)
		10203032512					



SECTION I: TOOL STRING

2013

JP042613

REBCO

Type 'SO' and 'SD' Spring Jar Assembly: 1 1/2" – 2 1/2"

Rebco Spring Jar is a telescoping up-stroke Jar installed below the Stem. The impact force can be predetermined at surface by the Operator with the Calibration Unit shown below.

Rebco offers Spring Jars with Threaded or QLS Connections.



Type 'SO' - Threaded Connection

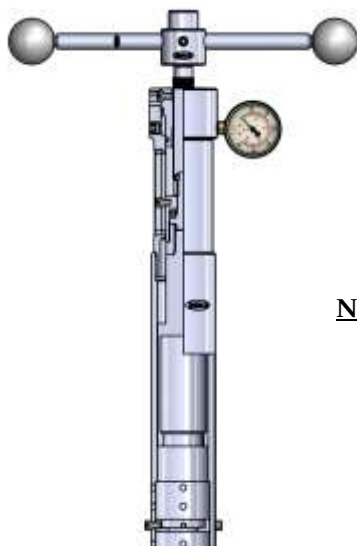
NOM SIZE	ASSEMBLY NUMBER	ENGINEERING				
		MAX OD	CONNECTION	FISHING NECK	LENGTH	WEIGHT Lbs (kgs)
1 1/2"	10214201500	1.50"	15/16" - 10	1.375"	35.68"	14.20 (6.94)
1 3/4"	10214201750	1.75"	1 1/16" - 10	1.750"	37.55"	19.28 (8.75)
1 7/8"	10214201870	1.88"				22.45 (10.18)
2 1/8"	10214202120	2.12"				29.56 (13.41)
2 1/2"	10214202500	2.50"	1 9/16" - 10	2.313"	38.65"	43.36 (21.97)
	10214202501				38.90"	

Type 'SD' - QLS Connection

NOM SIZE	ASSEMBLY NUMBER	ENGINEERING				
		MAX OD	CONNECTION	FISHING NECK	LENGTH	WEIGHT Lbs (kgs)
1 1/2"	10214031500	1.50"	'RQLD'	1.375"	42.38"	16.01 (7.26)
1 3/4"	10214031750	1.75"		22.21 (10.07)		
1 7/8"	10214031870	1.88"		25.75 (11.68)		
2 1/8"	10214032120	2.12"		33.83 (15.35)		
2 1/2"	10214032500	2.50"		44.00"	48.43 (21.97)	

ACCESSORIES: Shown Tools are necessary to set the Jars for desired Impact. Tools are priced separately. Order by **PART NUMBER** shown.

Calibration Unit



TOOL	SIZE	PART NUMBER
CALIBRATION UNIT	1 1/2" - 2 1/8"	10202161
	2 1/2"	10202162
ADJUSTMENT WRENCH	1 1/2"	1021433
	1 3/4" - 2 1/8"	1021434
	2 1/2"	1021451
RELEASE WRENCH	1 1/2"	1021413
	1 3/4" - 2 1/8"	1021435
	2 1/2"	1021449
		1021450

Adjustment Wrench



NOTE: See **Rebco** 'DOM' (Design and Operating Manual) for proper Service and Setting of **Rebco** Type 'SO' and Type 'SD' Jars.



Release Wrench



SECTION I: TOOL STRING

2013

JP042613

REBCO

Product Code: 102

Type 'EO' and 'ED' Accelerator Assembly: 1 1/2" - 2 1/2"

Rebco Accelerator is designed to be used with various Jars. The Accelerator assists in maintaining a constant pull as the Jars open, and upon release, the impact is intensified.

Rebco offers Accelerator with Threaded and QLS Connections.



Type 'EO' - Threaded Connection

NOM SIZE	ASSEMBLY NUMBER	ENGINEERING				
		MAX OD	CONNECTION	FISHING NECK	LENGTH	WEIGHT Lbs (kgs)
1 1/2"	10204201500	1.50"	15/16" - 10	1.375"	22.66"	7.0 (3.18)
1 3/4"	10204201750	1.75"	1 1/16" - 10	1.750"		14.0 (6.35)
1 7/8"	10204201870	1.88"			27.44"	14.2 (6.45)
2 1/8"	10204202120	2.12"		2.313"	27.95"	18.0 (8.20)
2 1/2"	10204202500	2.50"	1 9/16" - 10		24.8 (11.25)	
	10204202501					



Type 'ED' - QLS Connection

NOM SIZE	ASSEMBLY NUMBER	ENGINEERING				
		MAX OD	CONNECTION	FISHING NECK	LENGTH	WEIGHT Lbs (kgs)
1 1/2"	10204031500	1.50"	'RQLD'	1.375"	27.45"	7.9 (3.58)
1 3/4"	10204031750	1.75"		15.4 (6.99)		
1 7/8"	10204031870	1.88"		32.36"	15.6 (7.08)	
2 1/8"	10204032120	2.12"			19.3 (8.75)	
2 1/2"	10204032500	2.50"			31.2 (14.2)	



SECTION I: TOOL STRING

2013

JP042613

REBCO

Product Code: 103

Type 'AO' and 'AD' Knuckle Joint Assembly: 3/8" – 2 1/2"

Rebco Knuckle Joint has a ball type swivel joint to provide flexibility in the Wireline Tool String. Normally, it is used on the end of the Wireline Tool String to allow for angular movement between the tool string and the Running or Pulling Tool.

Rebco offers Knuckle Joints with Threaded and QLS Connections, and Double Fishing Neck.

Type 'AO' - Threaded Connection



NOM SIZE	ASSEMBLY NUMBER	ENGINEERING				
		MAX OD	CONNECTION	FISHING NECK	LENGTH	WEIGHT Lbs (kgs)
3/8"	10300200375	.38"	1/4" - 20	NONE	4.0"	.05 (.02)
1/2"	10300200500	.50"	3/8" - 16	NONE	3.81"	.2 (.10)
3/4"	10300200750	.75"	1/2" - 13	.687"	6.19"	.5 (.25)
7/8"	10300200875	.88"		.750"		.7 (.3)
1"	10300201000	1.00"	5/8" - 11	1.187"	7.23"	1.0 (.45)
1 1/4"	10300201250	1.25"	15/16" - 10		1.375"	10.12"
1 1/2"	10300201500	1.50"		1 1/16" - 10	1.750"	
1 3/4"	10300201750	1.75"	2 1/8"			2.313"
1 7/8"	10300201870	1.88"		2 1/2"	11.84"	
2 1/8"	10300202120	2.12"	1 9/16" - 10			2.313"
2 1/2"	10300202500	2.50"		1 9/16" - 10	2.313"	
	10300202501					

Type 'AD' - QLS Connection

NOM SIZE	ASSEMBLY NUMBER	ENGINEERING				
		MAX OD	CONNECTION	FISHING NECK	LENGTH	WEIGHT Lbs (kgs)
1 1/2"	10300031500	1.50"	'RQLD'	1.375"	15.94"	5.3 (2.40)
1 3/4"	10300031750	1.75"		1.750"	10.12"	8.4 (3.81)
1 7/8"	10300031870	1.88"		1.750"	15.94"	8.6 (3.90)
2 1/8"	10300032120	2.12"		2.313"	16.44"	10.3 (4.67)
2 1/2"	10300032500	2.50"		2.313"	16.44"	16.1 (7.30)

Rebco Type 'AS' Knuckle Joint with 'RQLS' connection is available

