

AFFIDAVIT OF NATHANIEL E FRANK-WHITE

1. I am a Records Request Processor at the Internet Archive. I make this declaration of my own personal knowledge.
2. The Internet Archive is a website that provides access to a digital library of Internet sites and other cultural artifacts in digital form. Like a paper library, we provide free access to researchers, historians, scholars, and the general public. The Internet Archive has partnered with and receives support from various institutions, including the Library of Congress.
3. The Internet Archive has created a service known as the Wayback Machine. The Wayback Machine makes it possible to browse more than 450 billion pages stored in the Internet Archive's web archive. Visitors to the Wayback Machine can search archives by URL (i.e., a website address). If archived records for a URL are available, the visitor will be presented with a display of available dates. The visitor may select one of those dates, and begin browsing an archived version of the Web. Links on archived files in the Wayback Machine point to other archived files (whether HTML pages or other file types), if any are found for the URL indicated by a given link. For instance, the Wayback Machine is designed such that when a visitor clicks on a hyperlink on an archived page that points to another URL, the visitor will be served the archived file found for the hyperlink's URL with the closest available date to the initial file containing the hyperlink.
4. The archived data made viewable and browsable by the Wayback Machine is obtained by use of web archiving software that automatically stores copies of files available via the Internet, each file preserved as it existed at a particular point in time.
5. The Internet Archive assigns a URL on its site to the archived files in the format `http://web.archive.org/web/[Year in yyyy][Month in mm][Day in dd][Time code in hh:mm:ss]/[Archived URL]` aka an "extended URL". Thus, the extended URL `http://web.archive.org/web/19970126045828/http://www.archive.org/` would be the URL for the record of the Internet Archive home page HTML file (`http://www.archive.org/`) archived on January 26, 1997 at 4:58 a.m. and 28 seconds (1997/01/26 at 04:58:28). The date indicated by an extended URL applies to a preserved instance of a file for a given URL, but not necessarily to any other files linked therein. Thus, in the case of a page constituted by a primary HTML file and other separate files (e.g., files with images, audio, multimedia, design elements, or other embedded content) linked within that primary HTML file, the primary HTML file and the other files will each have their own respective extended URLs and may not have been archived on the same dates.
6. Attached hereto as Exhibit B are true and accurate copies of the Internet Archive's records of the archived files for the URLs and the dates specified in the attached coversheet of each file.





7. I declare under penalty of perjury that the foregoing is true and correct.

DATE: 05/18/2023

Nathaniel Frank-White

Nathaniel E Frank-White

Please see attached
All Purpose
Jurat form
for additional
Notary Events



EXHIBIT B



https://web.archive.org/web/20150525140814/http://hunting-intl.com/media/358585/wireline_crossovers_slickline_adapters.pdf



The following table lists the most common type of slickline crossovers and couplings. Contact your local Hunting Titan representative for availability of adapters not catalogued.



SLICKLINE CROSSOVER AND COUPLING SPECIFICATIONS

Description	Part Number	Max. Temp. (°F)[°C]*	Max. Pressure (psi)[MPa]	Upper Head Connection †	Lower Head Connection†
1 " GO Connector to Sucker Rod Crossovers	1014-000-013	400 [204]	20,000 [138]	5/8" Sucker Rod Pin	13/16"-16 GO Box
	1014-000-014			5/8" Sucker Rod Pin	13/16"-16 GO Pin
	1014-000-015			5/8" Sucker Rod Box	13/16"-16 GO Box
	1014-000-016			5/8" Sucker Rod Box	13/16"-16 GO Pin
GO Connector to Sucker Rod Crossovers	1015-000-013	400 [204]	20,000 [138]	5/8" Sucker Rod Pin	1-3/16"-12 GO Box
	1015-000-014			5/8" Sucker Rod Pin	1-3/16"-12 GO Pin
	1015-000-015			5/8" Sucker Rod Box	1-3/16"-12 GO Box
	1015-000-016			5/8" Sucker Rod Box	1-3/16"-12 GO Pin
	1015-000-023			3/4" Sucker Rod Pin	1-3/16"-12 GO Box
	1015-000-024			3/4" Sucker Rod Pin	1-3/16"-12 GO Pin
	1015-000-025			3/4" Sucker Rod Box	1-3/16"-12 GO Box
	1015-000-026			3/4" Sucker Rod Box	1-3/16"-12 GO Pin
	1015-000-033			7/8" Sucker Rod Pin	1-3/16"-12 GO Box
	1015-000-034			7/8" Sucker Rod Pin	1-3/16"-12 GO Pin
	1015-000-035			7/8" Sucker Rod Box	1-3/16"-12 GO Box
	1015-000-036			7/8" Sucker Rod Box	1-3/16"-12 GO Pin
Sucker Rod Crossover	1016-000-013	-	-	5/8" Sucker Rod Pin	3/4" Sucker Rod Box
	1016-000-014			5/8" Sucker Rod Pin	3/4" Sucker Rod Pin
	1016-000-015			5/8" Sucker Rod Box	3/4" Sucker Rod Box
	1016-000-016			5/8" Sucker Rod Box	3/4" Sucker Rod Pin
	1016-000-023			5/8" Sucker Rod Pin	7/8" Sucker Rod Box
	1016-000-024			5/8" Sucker Rod Pin	7/8" Sucker Rod Pin
	1016-000-025			5/8" Sucker Rod Box	7/8" Sucker Rod Box
	1016-000-026			5/8" Sucker Rod Box	7/8" Sucker Rod Pin
	1016-000-033			3/4" Sucker Rod Pin	7/8" Sucker Rod Box
	1016-000-034			3/4" Sucker Rod Pin	7/8" Sucker Rod Pin
	1016-000-035			3/4" Sucker Rod Box	7/8" Sucker Rod Box
	1016-000-036			3/4" Sucker Rod Box	7/8" Sucker Rod Pin
Sucker Rod Couplings	1016-000-047	-	-	5/8" Sucker Rod Box	5/8" Sucker Rod Box
	1016-000-048			3/4" Sucker Rod Box	3/4" Sucker Rod Box
	1016-000-049			7/8" Sucker Rod Box	7/8" Sucker Rod Box
	1016-000-057			5/8" Sucker Rod Pin	5/8" Sucker Rod Pin
	1016-000-058			3/4" Sucker Rod Pin	3/4" Sucker Rod Pin
	1016-000-059			7/8" Sucker Rod Pin	3/4" Sucker Rod Box

* Viton O-rings need to be used above 325°F (163°C)

† 5/8" Sucker rod pin or box has 15/16"-10 thread, 3/4" has 1-1/16"-10 thread, 7/8" has 1-3/16"-10 thread



Wireline Crossovers/Slickline Adapters

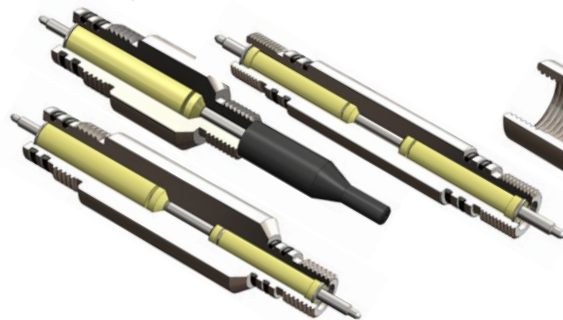
Hunting Titan provides the world's largest variety of wireline crossovers and adapters. The following table displays only a handful of the most common types. Contact your local Hunting Titan representative for availability of crossovers and adapters not catalogued.

WIRELINE CROSSOVER AND ADAPTER SPECIFICATIONS

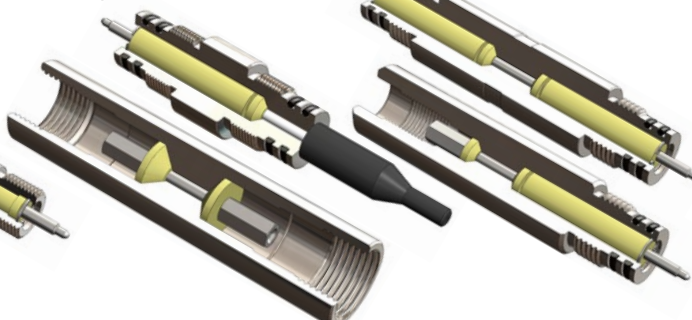
Description	Type [†]	O.D. (in)[mm]	Assembly Part Number	Contact Kit	Upper Head Connection	Lower Head Connection
1" GO Connections	Adapter	1 [25]	3902-000-060	3902-000-062	13/16"-16 GO Pin	13/16"-16 GO Pin
	Adapter		3902-000-110	3902-000-112	13/16"-16 GO Box	13/16"-16 GO Box
	Crossover	1-7/16 [37]	3902-000-040	3902-000-042	13/16"-16 GO Pin	1-3/16"-12 GO Box
	Crossover		3902-000-050	3902-000-052	13/16"-16 GO Box	1-3/16"-12 GO Pin
	Crossover (teardrop not sealed)		3902-000-070	3902-000-072	13/16"-16 GO Teardrop connector	1-3/16"-12 GO Pin
	Crossover		3902-000-080	3902-000-082	13/16"-16 GO Pin	1-3/16"-12 GO Pin
	Crossover (teardrop not sealed)		3902-000-090	3902-000-092	13/16"-16 GO Pin	1-3/16"-12 GO Teardrop connector
GO Connections	Double sealed adapter	1-7/16 [37]	3903-000-030	3903-000-032	1-3/16"-12 GO Pin	1-3/16"-12 GO Teardrop connector
	Double sealed phasing adapter		3903-000-040	3903-000-042	1-3/16"-12 GO Pin	1-3/16"-12 GO Teardrop connector
	Phasing adapter		3903-000-050	3903-000-052	1-3/16"-12 GO Pin	1-3/16"-12 GO banana plug
	Adapter		3933-000-000	3933-000-002	1-3/16"-12 GO Pin	1-3/16"-12 GO Pin
	Adapter		3934-000-000	3934-000-002	1-3/16"-12 GO Box	1-3/16"-12 GO Box
Acme Connections	Adapter	1-13/16 [46]	0252-000-000	0252-000-002	1-5/8"-6 Acme Pin	1-5/8"-6 Acme Pin
	Double sealed adapter		0253-000-060	0253-000-062	1-5/8"-6 Acme Pin	1-5/8"-6 Acme Teardrop connector
	Crossover (teardrop not sealed)	1-7/8 [48]	0253-000-000	0253-000-002	1-5/8"-6 Acme Pin	1-3/16"-12 GO Teardrop connector
	Crossover		0254-000-000	0254-000-002	1-5/8"-6 Acme Pin	1-3/16"-12 GO Pin
	Crossover		0255-000-000	0255-000-002	1-5/8"-6 Acme Pin	1-3/16"-12 GO Box
	Crossover	2-1/2 [64]	0252-000-030	0252-000-032	1-5/8"-6 Acme Box	1-3/16"-12 GO Box
	Crossover		0252-000-040	0255-000-002	1-5/8"-6 Acme Box	1-3/16"-12 GO Pin
	Adapter	3-1/8 [79]	0252-000-100	0252-000-032	1-5/8"-6 Acme Box	1-5/8"-6 Acme Box

[†] All adapters and crossovers rated to 400 °F (204 °C), 20,000 psi (138 MPa), 600 VDC and 2,000 mA. Viton O-rings need to be used above 325°F (163°C)

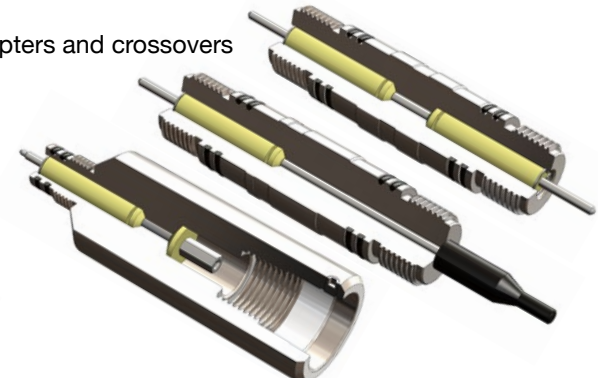
1" GO adapters and crossovers



GO adapters and crossovers



Acme adapters and crossovers

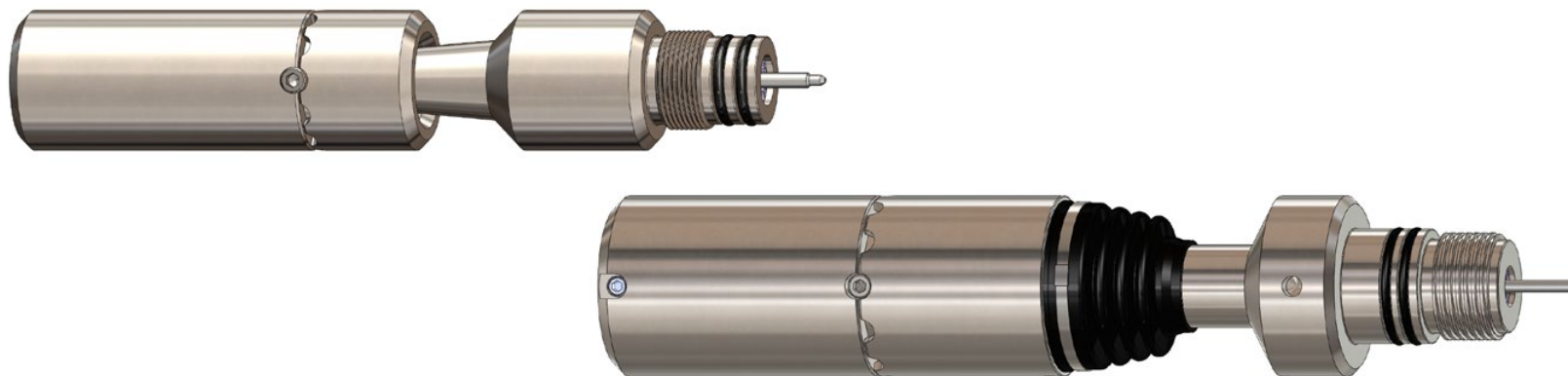




Hunting Titan knuckle joints use nickel coated ball joints to increase the flexibility of wireline toolstrings by 10°. This reduces the effective rigid length allowing easier passage through dog leg sections of deviated wells.

When combined in tandem, they not only allow more toolstring flexibility, but decouple centered and eccentered tools. This ensures high quality data in highly deviated and horizontal wells.

Unique electrical contacts at the ball joint guarantee undisrupted power transmission at any angle of bend and hydrostatic pressure.



APPLICATIONS

- Production logging
- Remedial cased hole support

FEATURES

- NEDOX® coated ball joints radically reduces wear and tear
- Knuckle shaft tapered to increase bending strength
- Can be combined in tandem

BENEFITS

- Longer life components reduce running costs
- Allows combination of centered and eccentric logging tools

HARDWARE SPECIFICATIONS

O.D. (in)[mm]	1 [25]	1-7/16 [37]	1-11/16 [43]	2-3/4 [70]
Part Number	3906-000-100	3906-000-060	3906-000-000	3906-000-320
Max. Temp. (°F)[°C]†	400 [204]	400 [204]	400 [204]	400 [204]
Max. Pressure (psi)[MPa]	20,000 [138]	20,000 [138]	20,000 [138]	20,000 [138]
Length (in)[mm]	6.5 [165]	7.0 [178]	7.9 [200]	11.6 [295]
Weight (lbm)[kg]	1.1 [0.5]	2.3 [1.0]	3.9 [1.8]	14.4 [6.5]
Max. Voltage (VDC)	600	600	600	600
Max. Current (mA)	2,000	2,000	2,000	2,000
Knuckle Movement	10°	10°	10°	10°
Max. Tension (lbf)[kN]	15,000 [67]	30,000 [133]	50,000 [222]	123,000 [547]
Contact Kit	3906-000-102	3906-000-052	3906-000-002	3906-000-322
Upper Head Connection	13/16"-16 GO Box	1-3/16"-12 GO Box	1-3/16"-12 GO Box	1-5/8"-6 Acme Box
Lower Head Connection	13/16"-16 GO Pin	1-3/16"-12 GO Pin	1-3/16"-12 GO Pin	1-5/8"-6 Acme Pin

† Viton O-rings need to be used above 325°F (163°C)



https://web.archive.org/web/20150530040318/http://hunting-intl.com/media/358579/sinker_bars_eccentered_weights.pdf



Sinker Bars/Eccentered Weights

Sinker bars offer several uses in cased hole wireline operations. They help increase the weight of wireline equipment such that they can overcome friction in deviated wells. Small perforating guns and production tools have low weights and are susceptible to being displaced out of hole in high flowing wells or high wellhead pressure. The addition of sinker bars can avoid such problems.



Hunting Titan sinker bars are produced from high quality materials guaranteed to last and withstand the rough treatment usually experienced by this type of equipment.

APPLICATIONS

- Production logging
- Perforating
- Remedial cased hole work

FEATURES

- Option for “over the line” sinker bar
- Lead and tungsten weights protected by strong steel casing

BENEFITS

- Over the line sinker bars do not require any electrical connections
- Saves rig time by conducting wireline services in highly deviated wells
- Available at Hunting Titan distribution warehouses worldwide

HARDWARE SPECIFICATIONS

O.D. (in)[mm]	Type	Max. Temp. [†] (°F)[°C]	Max. Pressure (psi)[MPa]	Max. Voltage (VDC)	Max. Current (mA)	Max. Tension (lbf)[kN]	Upper Head Connection	Lower Head Connection
Standard Sinker Bars								
1 [25]	Steel	400 [204]	20,000 [138]	600	2,000	21,000 [93]	13/16"-16 GO Box	13/16"-16 GO Pin
	Tungsten Filled							
1-3/8 [35]	Steel	400 [204]	20,000 [138]	600	2,000	59,000 [262]	1-3/16"-12 GO Box	1-3/16"-12 GO Pin
	Lead Filled							
	Tungsten Filled							
1-7/16 [37]	Steel	400 [204]	20,000 [138]	600	2,000	60,000 [267]	1-3/16"-12 GO Box	1-3/16"-12 GO Pin
	Lead Filled							
	Tungsten Filled							
1-11/16 [43]	Steel	400 [204]	20,000 [138]	600	2,000	63,000 [280]	1-3/16"-12 GO Box	1-3/16"-12 GO Pin
	Lead Filled							
	Tungsten Filled							
2 [51]	Steel	400 [204]	20,000 [138]	600	2,000	63,000 [280]	1-3/16"-12 GO Box	1-3/16"-12 GO Pin
	Lead Filled							
	Tungsten Filled							
2-3/4 [70]	Steel	400 [204]	20,000 [138]	600	2,000	120,000 [534]	*	*
	Tungsten Filled							
3-1/8 [79]	Steel	400 [204]	20,000 [138]	600	2,000	120,000 [534]	*	*
	Tungsten Filled							
Eccentered Weights								
2-3/4 [70]	Steel	400 [204]	20,000 [138]	600	2,000	120,000 [534]	*	*
3-1/8 [79]	Steel	400 [204]	20,000 [138]	600	2,000	120,000 [534]	*	*
Over The Line Sinker Bars								
1-3/8 [35]	Steel	-	-	-	-	42,000 [187]	Standard fishing neck	Cable Head
1-11/16 [43]	Steel	-	-	-	-	42,000 [187]	Standard fishing neck	Cable Head
2 [51]	Steel	-	-	-	-	42,000 [187]	Standard fishing neck	Cable Head
2-3/4 [70]	Steel	-	-	-	-	180,000 [801]	2"-6 Acme Pin	2"-6 Acme Box
	Tungsten Filled	-	-	-	-	180,000 [801]	2"-6 Acme Pin	2"-6 Acme Box
3-1/8 [79]	Steel	-	-	-	-	180,000 [801]	2"-6 Acme Pin	2"-6 Acme Box
	Tungsten Filled	-	-	-	-	180,000 [801]	2"-6 Acme Pin	2"-6 Acme Box

* Multiple types of connections are available for the 2-3/4" and 3-1/8" sinker bars and eccentered weights.

[†] Viton O-rings need to be used above 325°F (163°C)



STANDARD SINKER BAR AND ECCENTERED WEIGHTS ASSEMBLY PART NUMBERS

O.D. (in)[mm]	Type	Contact Kit	3ft (0.91m)		5ft (1.52m)		7ft (2.13m)	
			Assembly Part Number	Weight (lbm)[kg]	Assembly Part Number	Weight (lbm)[kg]	Assembly Part Number	Weight (lbm)[kg]
Standard Sinker Bars								
1 [25]	Steel	3921-002-00#† 3932-002-00#‡	3922-001-003† 3932-001-003‡	6 [3]	3922-001-005† 3932-001-005‡	11 [5]	3922-001-007† 3932-001-007‡	16 [7]
	Tungsten Filled		3923-001-003† 3931-001-003‡	12 [5]	3923-001-005† 3931-001-005‡	20 [9]	3923-001-007† 3931-001-007‡	29 [13]
1-3/8 [35]	Steel	3924-002-00#† 3927-002-00#‡	3926-006-003† 3929-006-003‡	13 [6]	3926-006-005† 3929-006-005‡	22 [10]	3926-006-007† 3929-006-007‡	32 [15]
	Lead Filled		3924-006-003† 3927-006-003‡	16 [7]	3924-006-005† 3927-006-005‡	27 [12]	3924-006-007† 3927-006-007‡	39 [18]
	Tungsten Filled		3925-006-003† 3928-006-003‡	22 [10]	3925-006-005† 3928-006-005‡	38 [17]	3925-006-007† 3928-006-007‡	54 [25]
1-7/16 [37]	Steel	3924-002-00#† 3927-002-00#‡	3926-007-003† 3929-007-003‡	15 [7]	3926-007-005† 3929-007-005‡	25 [11]	3926-007-007† 3929-007-007‡	35 [16]
	Lead Filled		3924-007-003† 3927-007-003‡	17 [8]	3924-007-005† 3927-007-005‡	30 [14]	3924-007-007† 3927-007-007‡	43 [20]
	Tungsten Filled		3925-007-003† 3928-007-003‡	23 [10]	3925-007-005† 3928-007-005‡	40 [18]	3925-007-007† 3928-007-007‡	57 [26]
1-11/16 [43]	Steel	3924-002-00#† 3927-102-00#‡	3926-011-003† 3929-011-003‡	21 [10]	3926-011-005† 3929-011-005‡	35 [16]	3926-011-007† 3929-011-007‡	49 [22]
	Lead Filled		3924-011-003† 3927-011-003‡	25 [11]	3924-011-005† 3927-011-005‡	43 [20]	3924-011-007† 3927-011-007‡	61 [28]
	Tungsten Filled		3925-011-003† 3928-011-003‡	35 [16]	3925-011-005† 3928-011-005‡	60 [27]	3925-011-007† 3928-011-007‡	84 [38]
2 [51]	Steel	3924-002-00#† 3927-102-00#‡	3926-016-003† 3929-016-003‡	30 [14]	3926-016-005† 3929-016-005‡	50 [23]	3926-011-007† 3929-011-007‡	70 [32]
	Lead Filled		3924-016-003† 3927-016-003‡	38 [17]	3924-016-005† 3927-016-005‡	65 [29]	3924-016-007† 3927-016-007‡	92 [42]
	Tungsten Filled		3925-016-003† 3928-016-003‡	52 [24]	3925-016-005† 3928-016-005‡	88 [40]	3925-016-007† 3928-016-007‡	124 [52]
2-3/4 [70]	Steel	3890-102-00#	3885-100-003	39 [18]	3885-100-005	75 [34]	3885-100-007	112 [51]
	Tungsten Filled		3885-300-003	53 [24]	3885-300-005	105 [48]	3885-300-007	158 [72]
3-1/8 [79]	Steel	3890-102-00#	3890-100-003	53 [24]	3890-100-005	101 [46]	3890-100-007	149 [68]
	Tungsten Filled		3890-300-003	66 [30]	3890-100-005	130 [59]	3890-300-007	194 [88]
Eccentered Weights								
2-3/4 [70]	Steel	4126-312-302	-	-	4126-275-300-5	55 [25]	-	-
3-1/8 [79]	Steel	4126-312-302	-	-	4126-312-300-5	71 [32]	-	-



Spring contact



Banana plug

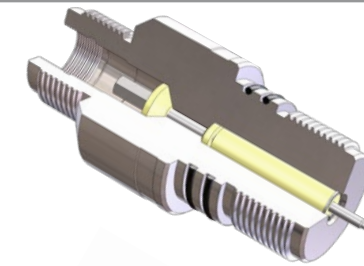
Use "3" for 3ft bar; "5" for 5ft bar; "7" for 7ft bar; "0" for contact kit without the contact rod
[†] Spring contact on lower head connection
[‡] Banana plug contact on lower head connection



Sinker Bars/Eccentered Weights

ADAPTERS FOR STANDARD AND ECCENTERED SINKER BARS

O.D. (in)[mm]	Assembly Part Number	Contact Kit	Upper Contact Head Assembly	Weight (lbm)[kg]
2-3/4 [70]	3885-000-080	0318-000-022	1-3/16"-12 GO Box with 2"-6 Acme fishing neck thread	7 [3]
	3885-000-150	3885-000-152	1-5/8"-6 Acme Pin	8 [4]
	3885-000-070	3890-000-222	2-3/4" O.D. CCL Assembly	8 [4]
	3885-000-110	3890-000-112	2-3/4" O.D. GO Quick-Change Assembly	11 [5]
	3885-000-140	3890-000-142	2-3/4" O.D. SIE Quick-Change Assembly	10 [5]
	3885-000-020	3885-000-022	Tandem connector sub assembly	10 [5]
	3885-000-120	3890-000-352	Lock collar tandem connector sub assembly	12 [5]
3-1/8 [79]	3890-000-170	0318-000-022	1-3/16"-12 GO Box with 2"-6 Acme fishing neck thread	8 [4]
	3890-000-240	3890-000-242	1-5/8"-6 Acme Pin	9 [4]
	3890-000-340	3890-000-222	2-3/4" O.D. CCL Assembly	9 [4]
	3890-000-110	3890-000-112	3-1/8" O.D. GO Quick-Change Assembly	13 [6]
	3890-000-220	3890-000-222	3-1/8" O.D. CCL Assembly	10 [5]
	3890-000-140	3890-000-142	3-1/8" O.D. SIE Quick-Change Assembly	11 [5]
	3890-000-150	3933-000-002	Tandem connector sub assembly	9 [4]
	3890-000-350	3890-000-352	Lock collar tandem connector sub assembly	12 [5]
Lower Contact Head Assembly				
2-3/4 [70]	3885-000-050	0318-000-022	1-5/8"-6 Acme Box	9 [4]
	3885-000-060	3885-000-062	2-3/4" O.D. CCL Assembly	7 [3]
3-1/8 [79]	3890-000-120	0318-000-122	1-5/8"-6 Acme Box	11 [5]
	3890-000-330	3885-000-062	2-3/4" O.D. CCL Assembly	9 [4]
	3890-000-130	5401-000-032	3-1/8" O.D. CCL Assembly	7 [3]



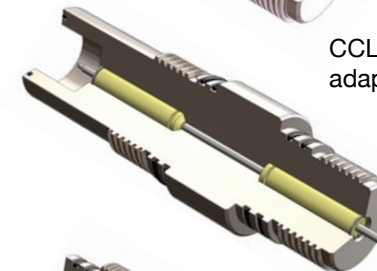
GO Box with fishing neck thread adapter



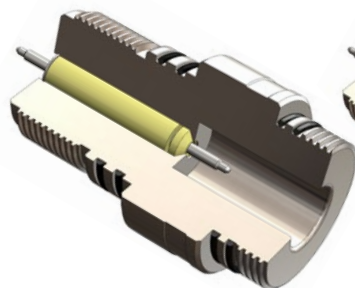
Acme pin adapter



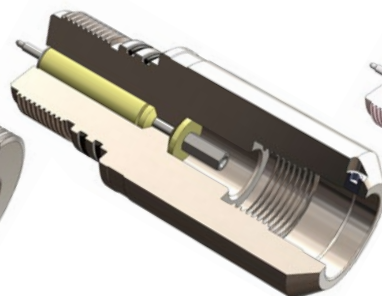
CCL assembly adapter (upper head)



GO Quick-Change assembly adapter



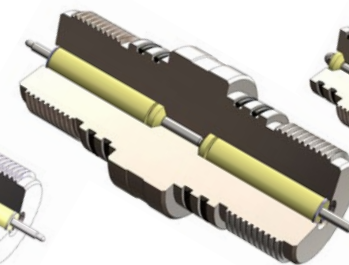
CCL assembly adapter (lower head)



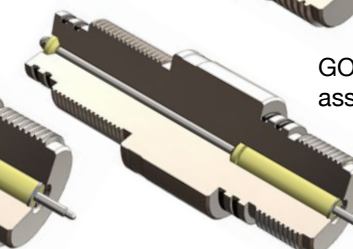
Acme box adapter



Lock collar tandem connector



Tandem connector



SIE Quick-Change assembly adapter



OVER THE LINE SINKER BAR PART NUMBERS

This series of over the line sinker bars features a bolt together assembly. As many weight bars can be bolted together as necessary.

The fishing neck utilizes a standard slickline profile. The lower sub allows a cone type II ropesocket to be built into it and screws directly into any of Hunting Titan's 1-7/16" (37mm) and 1-11/16" (43mm) logging cable head bodies.

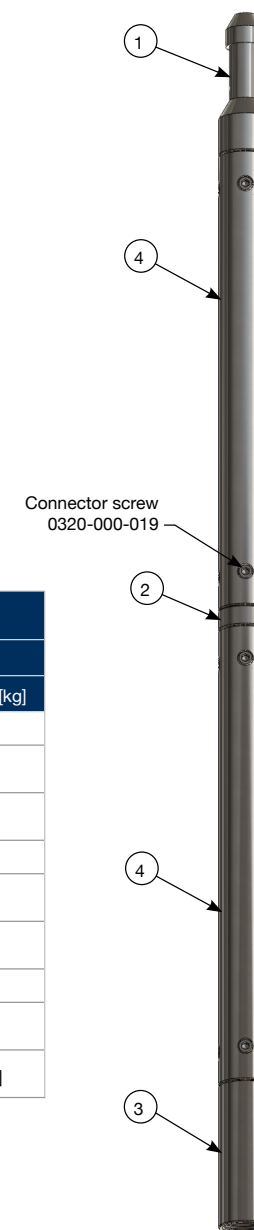
O.D. (in)[mm]	Line Size (in)[mm]	1	2	3
		Fishing Neck	Tandem Adapter	Lower Sub Cone Style II
1-3/8 [35]	7/32 [6]	1049-001-218	1049-002-218	1049-008-218
	0.288 [7]	1049-001-288	1049-002-288	1049-008-288
	5/16 [8]	1049-001-312	1049-002-312	1049-008-312
	15/32 [12]	1049-001-468	1049-002-468	1049-008-468
	0.474 [12]	1049-001-474	1049-002-474	1049-008-474
1-11/16 [43]	7/32 [6]	1050-001-218	1050-002-218	1050-008-218
	0.288 [7]	1050-001-288	1050-002-288	1050-008-288
	5/16 [8]	1050-001-312	1050-002-312	1050-008-312
	15/32 [12]	1050-001-468	1050-002-468	1050-008-468
	0.474 [12]	1050-001-474	1050-002-474	1050-008-474
2 [51]	7/32 [6]	1051-001-218	1051-002-218	1051-008-218
	0.288 [7]	1051-001-288	1051-002-288	1051-008-288
	5/16 [8]	1051-001-312	1051-002-312	1051-008-312
	15/32 [12]	1051-001-468	1051-002-468	1051-008-468
	0.474 [12]	1051-001-474	1051-002-474	1051-008-474

O.D. (in)[mm]	Type	4							
		Body							
		4ft (1.22m)	Weight (lb)[kg]	5ft (1.52m)	Weight (lb)[kg]	6ft (1.83m)	Weight (lb)[kg]	7ft (2.13m)	Weight (lb)[kg]
1-3/8 [35]	Steel	1049-375-S04 [†]	17 [8]	1049-375-S05 [†]	22 [10]	1049-375-S06 [†]	27 [12]	1049-375-S07 [†]	31 [14]
	Lead Filled	1052-375-L04 [†] 1052-500-L04 [‡]	21 [10]	1052-375-L05 [†] 1052-500-L05 [‡]	27 [12]	1052-375-L06 [†] 1052-500-L06 [‡]	32 [15]	1052-375-L07 [†] 1052-500-L07 [‡]	39 [18]
	Tungsten Filled	1055-375-T04 [†] 1055-500-T04 [‡]	28 [13]	1055-375-T05 [†] 1055-500-T05 [‡]	35 [16]	1055-375-T06 [†] 1055-500-T06 [‡]	43 [20]	1055-375-T07 [†] 1055-500-T07 [‡]	50 [23]
1-11/16 [43]	Steel	1050-437-S04 [§]	27 [12]	1050-437-S05 [§]	34 [15]	1050-437-S06 [§]	41 [19]	1050-437-S07 [§]	48 [22]
	Lead Filled	1053-375-L04 [†] 1053-500-L04 [‡]	33 [15]	1053-375-L05 [†] 1053-500-L05 [‡]	42 [19]	1053-375-L06 [†] 1053-500-L06 [‡]	51 [23]	1053-375-L07 [†] 1053-500-L07 [‡]	60 [27]
	Tungsten Filled	1056-375-T04 [†] 1056-500-T04 [‡]	44 [20]	1056-375-T05 [†] 1056-500-T05 [‡]	56 [25]	1056-375-T06 [†] 1056-500-T06 [‡]	68 [31]	1056-375-T07 [†] 1056-500-T07 [‡]	80 [36]
2 [51]	Steel	1051-500-S04 [‡]	38 [17]	1051-500-S05 [‡]	48 [22]	1051-500-S06 [‡]	58 [26]	1051-500-S07 [‡]	68 [31]
	Lead Filled	1054-375-L04 [†] 1054-500-L04 [‡]	48 [22]	1054-375-L05 [†] 1054-500-L05 [‡]	61 [28]	1054-375-L06 [†] 1054-500-L06 [‡]	75 [34]	1054-375-L07 [†] 1054-500-L07 [‡]	88 [40]
	Tungsten Filled	1057-375-T04 [†] 1057-500-T04 [‡]	65 [29]	1057-375-T05 [†] 1057-500-T05 [‡]	83 [38]	1057-375-T06 [†] 1057-500-T06 [‡]	101 [46]	1057-375-T07 [†] 1057-500-T07 [‡]	119 [54]

[†] Diameter of cable hole = 3/8" (10mm)

[‡] Diameter of cable hole = 1/2" (13mm)

[§] Diameter of cable hole = 7/16" (11mm)



OVER THE LINE SINKER BAR PART NUMBERS

This large diameter series of over the line sinker bars features a screw together assembly. As many weight bars can be screwed together as necessary.

They utilize a 2" fishing neck which is attached to the top of the weight bar. A complete Hunting Titan 1-7/16" (37mm) electrical cable head assembly fits inside the lower end of the weight bar and secured with an adapter.

O.D. (in)[mm]	Type	1	2						3	
		Fishing Neck	Body						Adapter	Lower Head Connection
			3ft (0.91m)		5ft (1.52m)		7ft (2.13m)			
			Part Number	Weight (lb)[kg]	Part Number	Weight (lb)[kg]	Part Number	Weight (lb)[kg]		
2-3/4 [70]	Steel	3884-275-001	3884-275-103	51 [23]	3884-275-105	87 [39]	3884-275-107	124 [56]	0268-000-010	2-3/4" O.D. CCL Assembly
	Tungsten Filled		3884-275-203	71 [32]	3884-275-205	144 [65]	3884-275-207	216 [98]		
3-1/8 [79]	Steel	3884-275-001	3884-312-103	67 [30]	3884-312-105	116 [53]	3884-312-107	164 [74]	0257-200-003	3-1/8" O.D. CCL Assembly
	Tungsten Filled		3884-312-203	88 [40]	3884-312-205	172 [78]	3884-312-207	256 [116]		



https://web.archive.org/web/20150525203652/http://hunting-intl.com/media/358573/quick_change_assemblies.pdf



Quick Change Assemblies

APPLICATIONS

- Perforating
- Plug / packer setting operations

FEATURES

- Utilize spinning collars

BENEFITS

- Avoid having to turn entire toolstring during makeup
- Available in all Hunting Titan distribution warehouses worldwide

Quick Change Assemblies are typically used to connect collar locating tools with perforating guns or plug setting tools. By incorporating spinning collars, there is no need to rotate the full toolstring when connecting guns to the electrical cable head. Different types of electrical connections are available to suit the needs of particular operations.

HARDWARE SPECIFICATIONS

O.D. (in)[mm]	Assembly Part Number [†]	Contact Kit	Max. Temp. [‡] (°F)[°C]	Max. Pressure (psi)[MPa]	Max. Voltage (VDC)	Max. Current (mA)	Max. Tension (lbf)[kN]	Upper Head Connection	Lower Head Connection
2-3/4 [70]	0271-100-040	0256-100-032	400 [204]	20,000 [138]	600	2,000	126,000 [560]	1-5/8"-6 Acme Pin	2-3/8"-6 Acme GO Box
	0260-100-040	0260-100-032					126,000 [560]	1-5/8"-6 Acme Pin	2-3/8"-6 Acme SIE Box
3-1/8 [79]	0256-100-040	0256-100-032	400 [204]	20,000 [138]	600	2,000	126,000 [560]	1-5/8"-6 Acme Pin	2-3/4"-6 Acme GO Box
	0256-000-070	0256-000-052					126,000 [560]	1-3/16"-12 GO Box	2-3/4"-6 Acme GO Box
	0260-100-000	0260-100-032					126,000 [560]	1-5/8"-6 Acme Pin	2-3/8"-6 Acme SIE Box

[†] Detonator blocks, firing head seal blocks and contact block assemblies need to be purchased separately

[‡] Viton O-rings need to be used above 325°F (163°C)

ACCESSORIES

O.D. (in)[mm]	Detonator Block		Firing Head Seal Block Teardrop Connection [§]
	Block	Pig Tail Assembly	
2-3/4 [70]	0271-000-013	0256-000-010	0271-000-020
3-1/8 [79]	0256-000-013	0256-000-010	0256-000-020

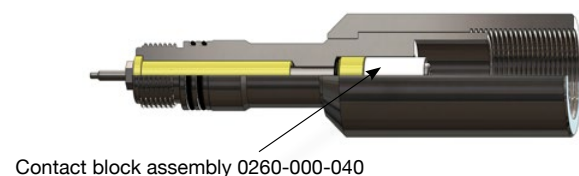
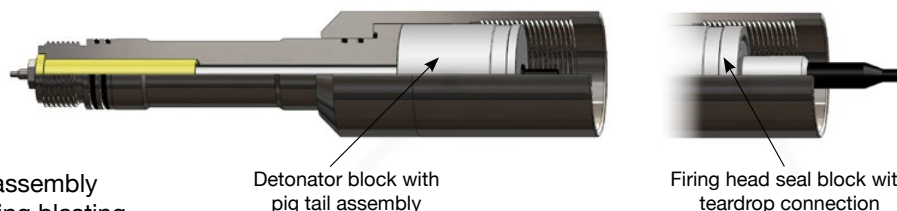
[§] Contact kit 3903-000-002



SIE style Quick Change Assemblies utilize a contact block assembly (0260-000-040) that accepts connections to firing heads using blasting plug assemblies.

Type	Part Number	Thread
Contact nut with contact eyelet	0330-000-080	1" – UNC-2A
Contact nut with button	0330-000-180	1" – UNC-2A
Acorn nut with teardrop connector	0330-000-190	1" – UNC-2A

Detonator blocks and firing head seal blocks are used to house electrical connections to the firing head inside the GO style Quick Change Assembly. Pig tail and teardrop connection types are available.



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https://web.archive.org/web/20141031145955/http://hunting-intl.com/media/358352/electrical_cable_heads.pdf



APPLICATIONS

- Cased hole wireline support
- Perforating
- Production logging
- Wireline steering tool services



FEATURES

- Compatible with all types of armored wireline cable
- Built in weak point and standard slickline fishing head
- High current tractor conversion kits available
- H₂S resistant models available
- Can be manufactured for 500°F (260°C) operations upon request
- Customization available for specific requirements

Cable heads play a vital role in all logging and perforating operations as they provide mechanical and electrical connections between the wireline cable and tool string. A weak point inside the cable head bears the entire load of the tool string weight.

Hunting Titan cable heads are constructed of high quality, high strength steel (H₂S resistant upon request) ensuring mechanical durability. The electric bulkhead protects the electrical connections from all types of corrosive wellbore fluids. Contact assemblies can be changed out for high power loads demanded by tractor operations. Cable mechanical integrity is guaranteed by the high quality weak point incorporated inside the head ensuring clean release of a stuck tool string. Standard slickline fishing heads built into Hunting Titan cable heads allow for quick and easy fishing operations.

BENEFITS

- Interchangeable parts allow multiple use with different types of cable
- Reduced operating costs

A four piece logging head can be ordered upon request that allows the attachment of standard weight bars into the logging head.

HARDWARE SPECIFICATIONS

O.D. (in)[mm]	Type	Max. Temp. [†] (°F)[°C]	Max. Pressure (psi)[MPa]	Length (in)[mm]	Weight (lbm)[kg]	Max. Voltage (VDC)	Max. Current (mA)	Max. Tension (lbf)[kN]	Thread
1 [25]	Clamp Ring Type	400 [204]	20,000 [138]	11.3 [287]	1.9 [0.9]	600	2,000	24,000 [107]	13/16"-16 GO Pin
1-7/16 [37]	Cone Type II	400 [204]	20,000 [138]	12.4 [315]	3.6 [1.6]	600	2,000	42,000 [187]	1-3/16"-12 GO Pin
1-11/16 [43]	Cone Type II	400 [204]	20,000 [138]	12.4 [315]	5.4 [2.4]	600	2,000	42,000 [187]	1-3/16"-12 GO Pin

[†] Viton O-rings need to be used above 325°F (163°C)



ASSEMBLY PART NUMBERS

The following table lists the assembly part numbers of electrical cable heads that are compatible with the most common electric wireline diameters. Contact your local Hunting Titan representative for the availability of cable heads not listed.

O.D. (in)[mm]	Type	Contact Kit	Electric Wireline Diameter (in)[mm]				
			7/32 [6]	0.288 [7]	5/16 [8]	15/32 [12]	0.474 [12]
1 [25]	Clamp Ring	3901-000-002	3910-*22-030 [§] 3910-*22-035 [‡]	3910-*28-040	3910-*31-043	-	-
1-7/16 [37]	Cone Type II	3903-000-002	3916-*22-030 [§] 3916-*22-035 [‡]	3916-*28-040	3916-*31-043	3916-*47-049	3916-*474-065
	4 Piece Cone Type II [†]		3946-*22-030 [§] 3946-*22-035 [‡]	3946-*28-040	3946-*31-043	3946-*47-049	3946-*474-065
1-11/16 [43]	Cone Type II	3903-000-002	5916-*22-030 [§] 5916-*22-035 [‡]	5916-*28-040	5916-*31-043	5916-*47-049	5916-*474-065
	4 Piece Cone Type II [†]		5946-*22-030 [§] 5946-*22-035 [‡]	5946-*28-040	5946-*31-043	5946-*47-049	5946-*474-065

* Use "0" for standard service; "N" for H₂S service

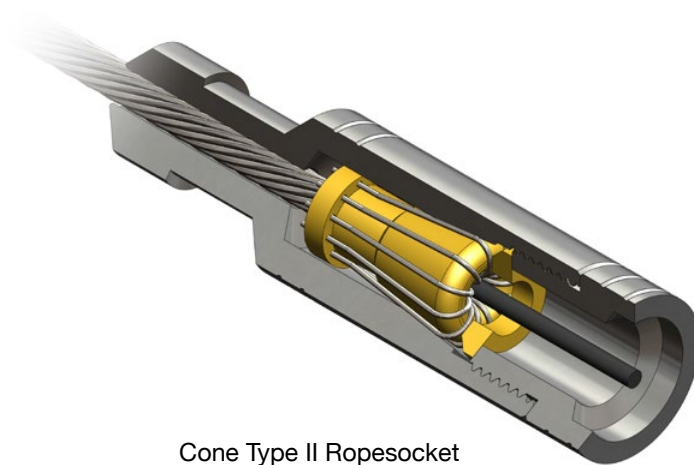
[†] Weight bars need to be ordered separately

[§] 0.030" strand diameter

[‡] 0.035" strand diameter



Clamp Ring Type Ropesocket

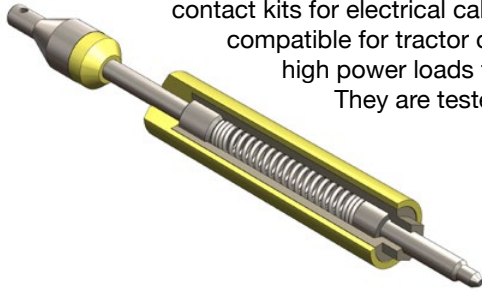


Cone Type II Ropesocket



ACCESSORIES

Contact kits are available to make repair and maintenance of your cable heads rapid and simple. Hunting Titan also supplies contact kits for electrical cable heads that are compatible for tractor operations which require high power loads for long periods of time. They are tested to 600V and 6,000mA.



Cable Head Size (in)[mm]	Conventional Contact Kit	Tractor Contact Kit
1 [25]	3901-000-002	-
1-7/16 [37]	3903-000-002	3903-000-502
1-11/16 [43]	3903-000-002	3903-000-502

Correct weakpoint construction is critical to perform any wireline operation safely. The ropsocket alignment tool ensures correct position and alignment of the clamp ring over the ropsocket inside the cable head.



Cable Head Size (in)[mm]	Part Number
1 [25]	3910-000-005
1-7/16 [37]	3914-000-005
1-11/16 [43]	3914-000-005

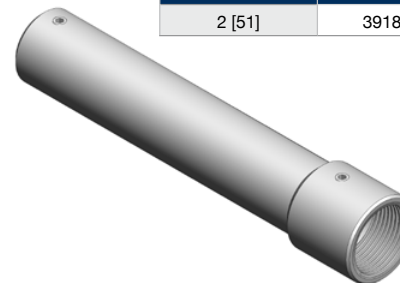
Protect your wireline cable from damage during rig-up and rig-down operations by using a gooseneck. Hunting Titan goosenecks are specifically designed to fit all cable heads and provide the optimal radius to eliminate cable deformation while maintaining an easy to use compact size.

Part Number: 1051-GNK-050



The 2" (51 mm) fishing neck assembly can be easily slid over any 1-7/16" (37 mm) logging head. This provides a large smooth surface for fishing grapples to latch onto.

O.D. (in)[mm]	Part Number	Lower Head Connection
2 [51]	3918-000-000	2"-6 Acme Box



JURAT ATTACHMENT

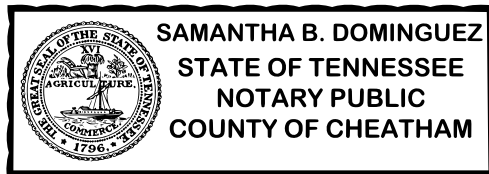
A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF Tennessee }

COUNTY OF Cheatham }

The foregoing instrument was subscribed and sworn before me this date of 05/18/2023, by Nathaniel Frank-White

This notarial act was an online notarization.



ONLINE NOTARY PUBLIC
MY COMMISSION EXPIRES: JULY 26 2025

(Notary Seal)

Notary's Signature *Samantha B. Dominguez*

Registration No.: 0

Commission Expiration Date: July 26, 2025

