

StimTube™ Tool Trade Policies and Part Lists

MAN-STIM-002 (R16)

OWEN OIL TOOLS

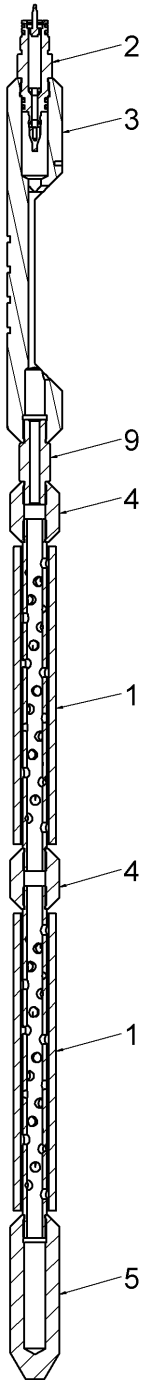
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Warning: use of owen equipment contrary to manufacturer's specifications or operating instructions may result in property damage, serious injury or fatality. If you are not trained in the handling and use of explosive devices, do not attempt to use or assemble any owen perforating systems or owen firing devices.

This technology is regulated by and, if exported, was exported from the united states in accordance with the export administration regulations (EAR). Diversion contrary to U.S. Law is prohibited. Export and/or re-export of this technology may require issuance of a license by the bureau of industry and security (BIS), U.S. Department of Commerce. Consult the BIS, the EAR, and/or Owen Compliance Services, Inc. To determine licensing requirements for export or re-export of this technology.

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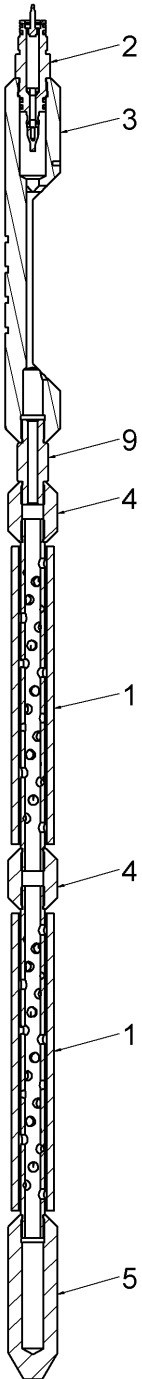
1-1/2 inch BOM and Schematic



ITEM	PART NUMBER	DESCRIPTION
1a	STS-1500-T01A	StimTube™ Tool, 1-1/2" , 1 FT
1b	STS-1500-T02A	StimTube™ Tool, 1-1/2" , 2 FT
1c	STS-1500-T03A	StimTube™ Tool, 1-1/2" , 3 FT
2	AES-AS40027	Sub Adapter Assy., 1-3/8" O.D. (ADP-1375-358)
3	STS-1500-280	Top Sub, 1-1/2" Dia StimTube™
4	STS-1500-005	Collar, 1-1/2" Dia StimTube™ Tool
5	STS-1500-078	Bull Plug, 1-1/2" Dia StimTube™ Tool
6	-	40 gr. Round, LS Detonating Cord*
7	DET-0100-018	.218" X .187" Teflon tbg, 2" length, (grommet between det cord and detonator) (not shown)
8	DET-3050-001	Uni-Det Detonator (not shown)
9	STS-1250-001	Adapter for Collar to Top Sub

* Select proper Detonating Cord to meet Well Conditions and Time - Temperature requirements.

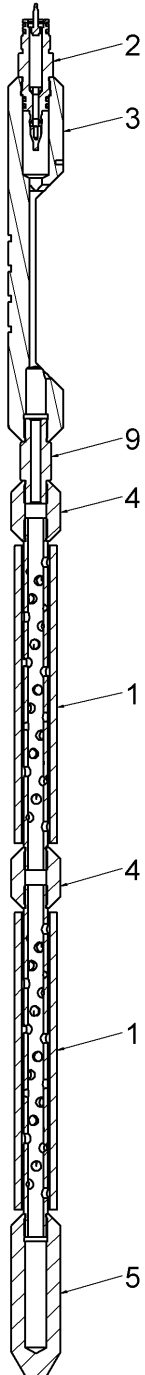
1-11/16 inch BOM and Schematics



Item	Part Number	Description
1a	STS-1687-T01A	StimTube™ Tool, 1-11/16 , 1 FT
1b	STS-1687-T02A	StimTube™ Tool, 1-11/16 , 2 FT
1c	STS-1687-T03A	StimTube™ Tool, 1-11/16 , 3 FT
2	AES-AS40027	Sub Adapter Assy., 1-3/8" O.D. (ADP-1375-358)
3	STS-1687-280	Top Sub, 1-11/16" Dia StimTube™
4	STS-1687-005	Collar, 1-11/16" Dia StimTube™ Tool
5	STS-1687-078	Bull Plug, 1-11/16" Dia StimTube™ Tool
6	-	40 gr. Round, LS Detonating Cord*
7	DET-0100-018	.218" X .187" Teflon tbg, 2" length, (grommet between det cord and detonator) (not shown)
8	DET-3050-001	Uni-Det Detonator (not shown)
9	STS-1250-001	Adapter for Collar to Top Sub

* Select proper Detonating Cord to meet Well Conditions and Time - Temperature requirements.

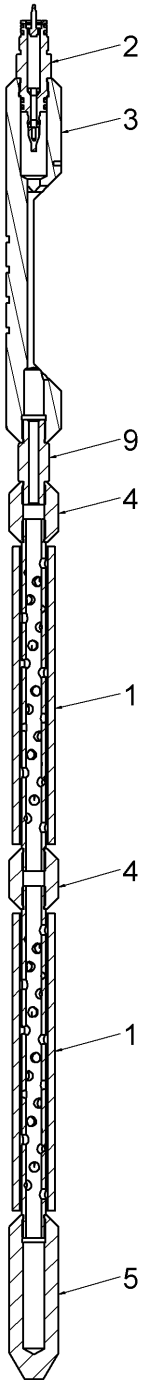
2 inch BOM and Schematics



ITEM	PART NUMBER	DESCRIPTION
1a	STS-2000-T01A	StimTube™ Tool, 2-0 , 1 FT
1b	STS-2000-T02A	StimTube™ Tool, 2-0 , 2 FT
1c	STS-2000-T03A	StimTube™ Tool, 2-0 , 3 FT
2	AES-AS40027	Sub Adapter Assy., 1-3/8" O.D.(ADP-1375-358)
3	STS-2000-280	Top Sub, 2" Dia StimTube™
4	STS-2000-005	Collar, 2" Dia StimTube™ Tool
5	STS-2000-078	Bull Plug, 2" Dia StimTube™ Tool
6	-	40 gr. Round, LS Detonating Cord*
7	DET-0100-018	.218" X .187" Teflon tbg, 2" length, (grommet between det cord and detonator) (not shown)
8	DET-3050-001	Uni-Det Detonator (not shown)
9	STS-1250-001	Adapter for Collar to Top Sub

* Select proper Detonating Cord to meet Well Conditions and Time - Temperature requirements.

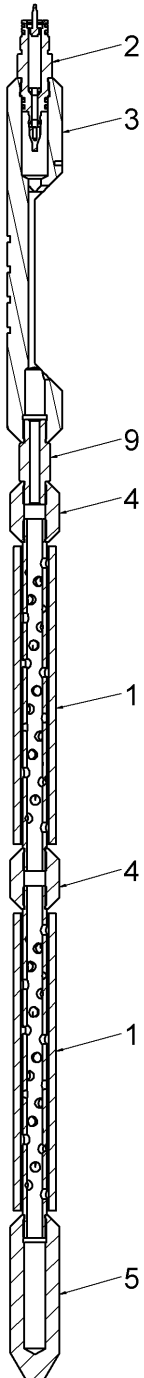
2-1/2 inch BOM and Schematics



ITEM	PART NUMBER	DESCRIPTION
1a	STS-2500-T02A	StimTube™ Tool, 2-1/2" , 2 FT
1b	STS-2500-T03A	StimTube™ Tool, 2-1/2" , 3 FT
2	AES-AS40027	Sub Adapter Assy., 1-3/8" O.D.(ADP-1375-358)
3	STS-2500-280	Top Sub, 2-1/2" Dia StimTube™
4	STS-2500-005	Collar, 2-1/2" Dia StimTube™ Tool
5	STS-2500-078	Bull Plug, 2-1/2" Dia StimTube™ Tool
6	-	40 gr. Round, LS Detonating Cord*
7	DET-0100-018	.218" X .187" Teflon tbg, 2" length, (grommet between det cord and detonator) (not shown)
8	DET-3050-001	Uni-Det Detonator (not shown)
9	STS-1250-001	Adapter for Collar to Top Sub

* Select proper Detonating Cord to meet Well Conditions and Time - Temperature requirements.

3 inch BOM and Schematics

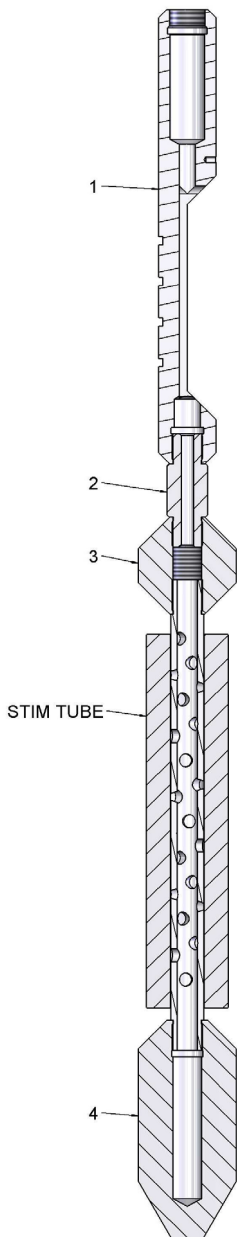


ITEM	PART NUMBER	DESCRIPTION
1a	STS-3000-T02A	StimTube™ Tool, 3-0, 2 FT
1b	STS-3000-T03A	StimTube™ Tool, 3-0, 3 FT
2	AES-AS40027	Sub Adapter Assy., 1-3/8" O.D. (ADP-1375-358)
3	STS-3000-280	Top Sub, 3" Dia StimTube™
4	STS-3000-005	Collar, 3" Dia StimTube™ Tool
5	STS-3000-078	Bull Plug, 3" Dia StimTube™ Tool
6	-	40 gr. Round, LS Detonating Cord*
7	DET-0100-018	.218" X .187" Teflon tbg, 2" length, (grommet between det cord and detonator) (not shown)
8	DET-3050-001	Uni-Det Detonator (not shown)
9	STS-1250-001	Adapter for Collar to Top Sub

* Select proper Detonating Cord to meet Well Conditions and

Time - Temperature requirements.

Also available are StimTube Subs that will allow a 1/2" O.D. overall Standoff from StimTube Propellant.



ITEM	OD SIZE	OWEN PART #	DESCRIPTION	RUN WITH STIMTUBE
1	2 in	STS-2000-280	Owen Top Sub 2" STIM Tube	1-1/2 in
	2-1/4 in	STS-2250-280	Owen Top Sub 2-1/4" STIM Tube	1-11/16 in
	2-1/2 in	STS-2500-280	Owen Top Sub 2-1/2" STIM Tube	2 in
	3 in	STS-3000-280	Owen Top Sub 3" STIM Tube	2-1/2 in
	3-1/2 in	STS-3500-280	Owen Top Sub 3-1/2" STIM Tube	3 in
2	1-1/4 in.	STS-1250-001	Adapter for Collar to Firing Head	All
3	2 in	STS-2000-005	Collar, 2" STIM Tube	1-1/2 in
	2-1/4 in	STS-2250-005	Collar, 2-1/4" STIM Tube	1-11/16 in
	2-1/2 in	STS-2500-005	Collar, 2-1/2" STIM Tube	2 in
	3 in	STS-3000-005	Collar, 3" STIM Tube	2-1/2 in
	3-1/2 in	STS-3500-005	Collar, 3-1/2" STIM Tube	3 in
4	2 in	STS-2000-078	Bull Plug, 2" STIM Tube	1-1/2 in
	2-1/4 in	STS-2250-078	Bull Plug, 2-1/4" STIM Tube	1-11/16 in
	2-1/2 in	STS-2500-078	Bull Plug, 2-1/2" STIM Tube	2 in
	3 in	STS-3000-078	Bull Plug, 3" STIM Tube	2-1/2 in
	3-1/2 in	STS-3500-078	Bull Plug, 3-1/2" STIM Tube	3 in

Trade Policies



Warning: *Explosives are destructive by nature! Do not attempt to disassemble or alter explosive products in any manner! Do not crush, hammer, pinch, impact, pull wires or abuse any explosive product!*



Warning: *Be sure to follow safe operating practices as found in API RP-67 in accordance with governmental regulations, company policies and manufacturer's recommendations!*



Warning: *This tool should only be assembled and operated by properly trained individuals!*

1.0 Warranty Information

1.1 It is expressly agreed that there are no warranties, expressed or implied, of merchantability, fitness or otherwise, made by Owen (hereinafter referred to as "Manufacturer") on equipment, parts or expendable supplies (hereinafter collectively referred to as "Product") sold to the purchaser other than as expressly stated herein. Subject to the terms and conditions hereof, Manufacturer warrants each new piece of Product sold to Purchaser (including original equipment placed thereon by Manufacturer) to be free of defects in materials or workmanship, if, and only if, all of the following conditions are met:

- A. The Product claimed to be defective has been exposed only to normal use and service, has been maintained, and has been used only to Manufacturer's instructions.
- B. Manufacturer is given prompt notice of any such defect.
- C. Purchaser has taken all reasonable steps to mitigate any such defects.

In no event shall the Manufacturer be liable for any injury, loss or damage, direct or consequential, special, incidental, indirect or punitive, arising out of or inability to use the Product sold to Purchaser by Manufacturer.

1.2 The extent of Manufacturer's liability and the customer's sole and exclusive remedy hereunder or otherwise shall be the replacement of any such Product at no cost or expense to Purchaser. In no event shall Manufacturer be liable to Purchaser for indirect, punitive, special, incidental or consequential damages.

- 1.3** This warranty shall be in effect with respect to a Product until six (6) months after date of sale of same to Purchaser, except: 1) this warranty shall apply to surface and subsurface electronics equipment only until 60 days after sale of same to Purchaser, and 2) scintillation detectors are warranted only to be in working order upon delivery of same to Purchaser.
- 1.4** This warranty is the only warranty either expressed, implied, or statutory, upon which Product is sold, and Purchaser's sole remedy in any cause of action (whether in tort, contract, breach of warranty or otherwise) arising in connection with the sale, use or ownership of any Product is expressly limited to the replacement of the defective Product, as above provided, all other damages and warranties, statutory or otherwise, being hereby expressly waived by the Purchaser.
- 1.5** Each Product (including, without limitation, all perforating systems, StimGun™ Assembly, StimTube™ Tool, pipe recovery products, jet cutters, detonators, boosters, detonating cord, wireline mechanical components, bridge plug systems, and all other downhole tools) is designed, tested, and qualified to operate properly only when used pursuant to the recommendations that Manufacturer provides to Purchaser. Incorporating any products supplied by third parties, whether ballistic or mechanical, into or while utilizing any Product is not recommended by Manufacturer. Incorporating any third party products may be unsafe and unreliable. Any such incorporation by Purchaser of a third party product shall automatically void the warranties set forth above.
- 1.6** Each Product has specifications and ratings that are determined by testing, evaluation, or engineering analysis. Purchaser shall notify Manufacturer if use of such Products exceeds 80% of the pressure rating or anytime Purchaser has reason or should have reason to believe that the Product will be utilized in conditions outside the normal operating conditions of the Product. This includes, but is not limited to, pressure, temperature, fluid and time exposure conditions.
- 1.7** Only an officer of Manufacturer has authority to alter or increase this warranty in any manner whatsoever, and no attempt to repair or promise to repair, replace or improve the Product covered by the warranty by any representative of the Manufacturer shall waive, change or extend this warranty in any manner whatsoever, unless such action, promise or other representation be in writing and signed by an officer of the Manufacturer.
- 1.8** The Purchaser warrants through the purchase of the Product that he is familiar with the Product and its proper use. Before using the Product, Purchaser shall give the Product a reasonable and prudent examination and/or tests to determine the suitability of said Product for Purchaser's intended use, and Purchaser assumes all risk and liability whatsoever in connection therewith from the time of delivery to Purchaser.

- 1.9** The Purchaser agrees to indemnify and hold harmless Manufacturer and its employees, officers, directors, parent, subsidiaries and affiliates, from liability against any and all claims, damages or assertions of liability of every nature whatsoever (other than the limits of liability defined hereunder) to persons or property arising out of or in connection with the sale, handling, use or malfunction of the Product which Manufacturer may deliver to the Purchaser, including but not limited to, any and all claims based upon asserted defects of materials or workmanship in the manufacture or sale of Manufacturer's Product and any claims in connection with Purchaser's incorporation of any product manufactures by a third party into or while utilizing any Product.

2.0 Terms and Conditions

International Shipments

- 2.1** Payment must be by irrevocable letter of credit, cash or lines of credit established. Letters of credit must be opened with or confirmed by a major U.S. Bank and must be valid for a minimum of three months after the specified delivery date of the materials to allow sufficient time for collection transmittals. Letters of credit must not contain deferred payment clauses and must allow for trans-shipment and partial deliveries. All foreign banking charges will be at the customer's expense.
- 2.2** Purchaser orders for large quantities and for non-standard items are not put into production until the Manufacturer receives the covering letter of credit and down payment as specified in the quotation.
- 2.3** While the Manufacturer strives to meet promised delivery dates based on the availability of materials as the time the quotation is made, the Manufacturer's performance is affected by the actions of suppliers; therefore, the Manufacturer will not accept orders containing penalty clause for late delivery and any provisions to the contrary are hereby void and without effect.
- 2.4** The effective delivery date will be at the date of ocean bill or air waybill as applicable.
- 2.5** The Manufacturer reserves the right to engage the services of a U.S. forwarder of the Manufacturer's choice.



Domestic

- 2.6 All prices are FOB Godley, Texas, and are subject to change without notice (prices in effect at the time of shipment or delivery will apply). Quotations will be made upon request for items not shown on the price list.
- 2.7 Terms to establish accounts with approved credit are net 30 days for expendable items and net cash for capital equipment items. Terms to customers without established credit are COD.
- 2.8 Should any account not be paid within 60 days, a service charge equal to 5% will be levied. If an account becomes 120 days old and if the account remains unpaid on the 15th day of the month, then suit will be filed for collection on the entire amount of the open account plus interest. In case any collection actions are initiated, the customer shall be responsible for any and all collection costs, court costs, and attorney fees.
- 2.9 All invoices are payable in Godley, Johnson County, Texas.

3.0 General

- 3.1 Collect calls from customers will be charged back to them unless Manufacturer expressly agrees to bear the expense.
- 3.2 To help pay for the cost of inspection, repacking, restocking, invoicing, credit memo, etc., there will be a charge of at least 15% on any returned items returned for credit, with a minimum charge of 10\$. No credit can be given on items returned without prior approval, and with written instruction accompanying the items, stating the reason for return, and the name of the Owen representative who authorized the return. Only department managers or more senior officials of Owen may authorize return of items for credit. Owen will not be responsible for holding or accounting for items returned without prior approval and proper written instructions being shipped with the returned items. If freight is not prepaid on the items returned for credit, the cost of freight will be deducted from credit issued. We can not be responsible for items that do not strictly comply with the requirements specified in this paragraph.

- 3.3** At Manufacturer's option, it may loan to any selected customer, only at said customer's request, certain employee(s) of Manufacturer for the purpose of operating equipment which said customer has bought or leased from Manufacturer, training other employee(s) in the operation of said equipment, or performing such other duties of said customer as may be requested; provided, however, only by its request for said services, customer expressly agrees that the "Loaned Employee(s)" shall be under the direction and control of said customer, that said customer shall supply the necessary equipment and supplies for the services to be performed by "Loaned Employee(s)" and customer understands that Manufacturer lends said employee(s) under the stipulation that employee(s) shall have only such authority as said customer shall direct. For such a period as Manufacturer elects to lend its employee(s) as directed above, customer shall at all times have the right of direction and control over said "Loaned Employee(s)". It is further understood that Manufacturer has no obligation under its contractual agreement(s) with customer if any, to loan its employee(s) to customer as a "Loaned Employee(s)" but will do so only at its option and only upon the request of customer. Further, in no event shall Manufacturer be liable for any damage, claim or cause of action resulting from the acts or omissions of "Loaned Employee(s)", and customers assume, and shall indemnify and hold harmless Manufacturer from and against, any such liability.
- 3.4** Because of a policy of continuous product improvements, we reserve the right to change designs, materials, or specifications and to discontinue products without notice.
- 3.5** Failure to enforce any or all of the above terms and conditions in a particular instance or instances shall not constitute a waiver of or preclude subsequent enforcement of any or all of the above terms and conditions.



Note: *40 gr. Round and Slim Detonating Cord has been used in StimTube (exposed) applications for many years without any recorded problems, even though the Manufacturer does not recommend for exposed well bore fluids.*