



INSPECTION SERVICES AND ENGINEERING CERTIFICATION

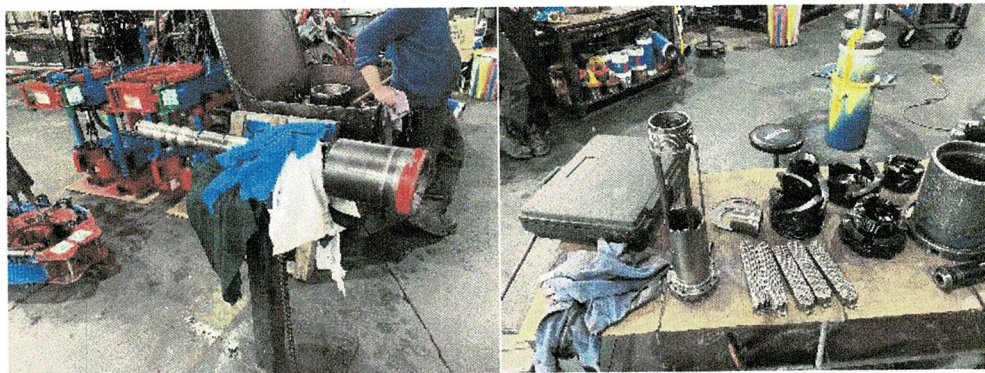
PHONE: 780.870.1547 EMAIL: operations@indexndt.ca Head Office Mail: P.O. Box 10524, Lloydminster, AB T9V 3A6

INSPECTION REPORT


EQUIPMENT LOCATION:	Lloydminster, Alberta				NDT PROCEDURE#:	INSP-001			
EXAMINATION COVERAGE:	RANDOM:	5%	10%	25%	50%	75%	100%	X	
ACCEPTANCE CRITERIA:	CSA W59	ISO 9927-1			CAODC RP	OTHER:			X
INSPECTION METHOD:	VT	X	UT	X	MT WET FLOURESCENT	X	MT WET BLACK	MT DRY RED	
EQUIPMENT INFO:	BLACK LIGHT MAKE - INOVA			LIGHT METER # 1822158			MAG COIL # RC1-30120121		

CLIENT:	K&S Power Tongs	UNIT/RIG:	KSV005
EQUIPMENT:	Volant Tool	MAKE/MODEL:	Volant CRTi2-4.5
RATING:	N/A	SERIAL NUMBER:	KSV005

EQUIPMENT PHOTOS



INSPECTION RESULTS

ACCEPTABLE:	X	REJECTED:	DATE OF INSPECTION:	April 27, 2023
TECHNICIAN:			COMMENTS:	
			Part:	Serial#:
			Mandrel	82304-03-4402A01-01
			Cage	81325-4435A17-02
			Upper Cam	81208-4437A04-07
			Lower Cam	81221-4437A05-04
			Cam Latch	81212-4437A06-02
			Cam Int.	80942-4437A03-05
			Die -	80980-01-4488A01-27
			Die -	80980-01-4488A01-28
			Die -	80980-01-4488A01-30
			Die -	80980-01-4400A02-63
			Die -	80980-01-4400A02-64
			Mandrel Thickness: 0.883/ 0.886/ 0.881/ 0.880/ 0.881	
			REPAIRS: NA	

QUALITY ASSURED INSPECTIONS FOR QUALITY ASSURED BUSINESSES

*Except as provided herein, Index NDT Inspections Ltd. makes no warranty, express or implied with respect to the mechanical or other conditions of the equipment inspected by us. Index NDT Inspections Ltd. shall only be responsible in the event of damage resulting directly from their inspection, and in no event, shall the liability of Index NDT Inspections Ltd. exceed the cost of inspection. *Our organization assumes only the responsibility of locating defects in the inspected components and welds made accessible at the time of inspection. All equipment should be cleaned to allow access to all welds and critical components. It is of the utmost importance that the unit's owner be aware that excessive coating over 10 mils can severely mask the detection of discontinuities while utilizing standard inspection techniques. We are not responsible for the mechanical or other conditions assembled condition except at customer's request.

H-INCLUSION P-POROSITY IUC-INTERNAL UNDERCUT EUC-EXTERNAL UNDERCUT S-SLAG C-CRACK IP-INCOMPLETE PENETRATION NF-NON-FUSION CR-CRACK PH-PIN HOLE D-DISCONTINUITY



REES N.D.T. INSPECTION SERVICES 2008 LTD.



15612-89 Street
Grande Prairie, AB T8V 2N8

Grande Prairie
(780) 539-3594
(780) 532-8047 (Fax)

Dispatch
1-888-540-3594
www.reesndt.com

Vegreville
(780) 603-4887
Email: gcoers@reesndt.com

INSPECTION DATE: 30-Mar-22

CLIENT: K & S Power Tongs
ADDRESS: 3614 63 Avenue Close
Lloydminster AB T9V 2W1

REES NDT PO NUMBER: R68182
CLIENT PO NUMBER: KSV005
REES NDT WO NUMBER: 197571

INSPECTION CERTIFICATE

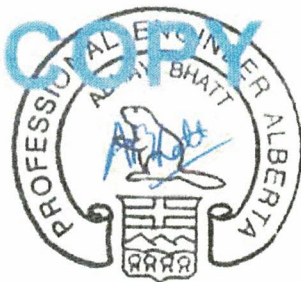
CERTIFICATION OF: CRT Mandrel
MAKE: Volant
MODEL: CRTi2-4.5
SERIAL NUMBER: 82304-03-4402A01-01
UNIT NUMBER: NA
CAPACITY: 120 ton
OWNER: K & S Power Tongs

Rees NDI Inspection Services 2008 Ltd. performed a VISUAL AND NON-DESTRUCTIVE TESTING inspection on the above mentioned CRT MANDREL. All observations have been recorded and are disclosed in the complete documentation for Rees NDT Work Order #197571. The scope of this certificate is limited to the inspection of the item's structural condition at the time of inspection and does not imply a review of the equipment's design or its associated capacity rating. The capacity noted above reflects the original equipment manufacturer's maximum capacity rating and may be reduced by operating conditions, regulatory requirements and the use of auxiliary equipment that has a lower capacity rating.

The undersigned Engineer reviewed all the inspection reports and has issued this certificate after all required repairs (if any) were completed. In the undersigned Engineer's opinion, the CRT MANDREL may be returned to service and is safe to use within the original manufacturer's specifications. The equipment owner is obliged to supply the OEM's operating instructions with the equipment and maintain the OEM's identification and capacity markings. If OEM information cannot be obtained, certified replacements must be obtained from a Professional Engineer.

This certification covers the above mentioned unit for a period of 5 YEARS AS PER API-8B from the date of inspection, or until the unit is damaged by handling, transportation or operation.

Reviewed
By:



12-Apr-2022

PERMIT TO PRACTICE	
REES NDT ENGINEERING LTD.	
Signature	<u>AKhatt</u>
Date	<u>12-Apr-2022</u>
PERMIT NUMBER: P 11509	
The Association of Professional Engineers and Geoscientists of Alberta	



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LOAD TEST CERTIFICATE

Owner K & S Power Tongs
Address 3614 63 Avenue Close
Lloydminster AB T9V 2W1

Date 30-Mar-22
Workorder # 197571
Purchase Order# KSV005

Contact Name:	Chris	Phone #:	(780) 872-8240
Item:	CRT Mandrel	Location:	Rees NDT Shop, Grande Prairie
Make:	Volant	Model:	CRTi2-4.5
Serial Number:	82304-03-4402A01-01	Unit:	NA
Capacity:		120 ton	

Proof Load Test 264000 lbs
Test Method: Proof 1.10

Test Date 31-Mar-22
Peak Load 272696 lbs

Required Duration (sec) 300

Passed ☒

Test Equipment:

Testing Frame
Pressure Gauge
Data Logger

Make:

Volker Ries
Rosemount
ACR Systems

Model:

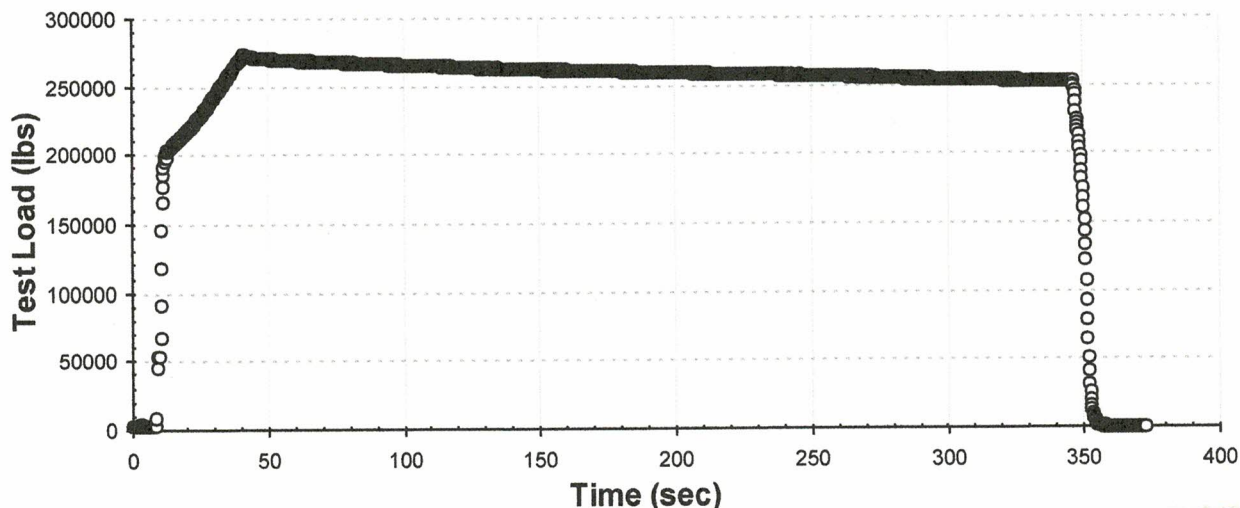
525 ton
3501
SRP-7-32K 0-25MA

Serial Number:

VR-01
-
96674

Capacity:

525 ton
(0-5000) psi
(0-25 mA)



DELAYED USE

Date of 1st Use: May 24/22.
Job #: Bathelmer
Signed By: [Signature]



Inspected By: J. House CGSB #20221 (MPI II) SNT #028 (MPI II) B. Kempert SNT #044 (MPI II LPI II) CGSB #24150 (MPI II) K. Gejdos Millwright (J-09-31585) Machinist (J-11-16754) J. Ibarbia

Rees NDT Records



REES N.D.T. INSPECTION SERVICES 2008 LTD.



- Non-Destructive Testing • UT MPI LPI
- Wall Thickness Testing • Hardness test
- Crane and Picker Certification
- Drilling Rig Certification
- Materials Consulting
- Failure Analysis
- Corrosion Monitoring
- Weld Procedures (WPS, PQR)
- Quality Control
- Predictive Maintenance
- Computer Generated Drawings (CAD)

GRANDE PRAIRIE - FT. NELSON - HIGH LEVEL - LLOYDMINSTER

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15612-89 Street Grande Prairie AB T8V 2N8

email: ronvader@reesndt.com

Consigned to K & S Power Tongs

Date 30-Mar-22

Address 3614 63 Avenue Close
Lloydminster AB
T9V 2W1

Workorder 197571

Location Rees NDT Shop, Grande Prairie

Purchase Order# KSV005

Customer K & S Power Tongs

Eng Certification - Visual - Fluorescent Magnetic Particle - Ultrasonic - Load Test

Contact Name:	Chris	Phone #:	(780) 872-8240
Item:	CRT Mandrel	Location:	Rees NDT Shop, Grande Prairie
		Model:	CRTi2-4.5
Make:	Volant	Unit:	NA
Serial Number:	82304-03-4402A01-01	Capacity:	120 ton

Field Report

RESULTS OF INSPECTION IN ALL ACCESSIBLE AREAS:

Rees NDT Inspection Services 2008 Ltd. performed a Visual, Wet Fluorescent Magnetic Particle Inspection, Wall Thickness Test and Load Test on the above mentioned CRT Mandrel. Mandrel was cleaned of paint, oil and grease prior to inspection. Mandrel was demagnetized at the time of inspection. See attached pictures.

MPI Inspection

Procedure: MPI-ASTM E709 Rev 0, Jan 22, 2019
Technique: MT-3 Wet Fluorescent Magnetic Particle
Acceptance Standard: API-8C
Surface Prep: Bare Metal / Machined
Material: Carbon Steel

NDT Inspection Results:

Pre Load Test - CRT Mandrel: No relevant indications or damage was noted at the time of inspection. 4 1/2" IF Box Plug Gauge Passed.
Post Load Test - CRT Mandrel: No relevant indications or damage was noted at the time of inspection.

5-Wall Thickness Readings Taken: 0.832", 0.831", 0.833", 0.833", 0.830" Average Reading: 0.832"
Areas scanned around and lowest readings recorded.
O.D. was measured at the same spot as wall thickness readings: O.D. 2.672"

Calibrated Equipment Used Blacklights: BL-30-00 Wet Benches: WB-02-00 UT Machines: USU-23-00 Cal Blocks: UT-CB-74-00 Digital Calipers & Micrometers: DVC-34-00

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Rees NDT Records

Received by:

AR = 0.2% = Passed.

Calculated with CRT maintenance procedure Appendix B mandrel neck area calculation.

This inspection and compliance certification covers items supplied for inspection.

Customer is responsible for PLC / mechanical components, and proper function of tool.

Equipment Used:

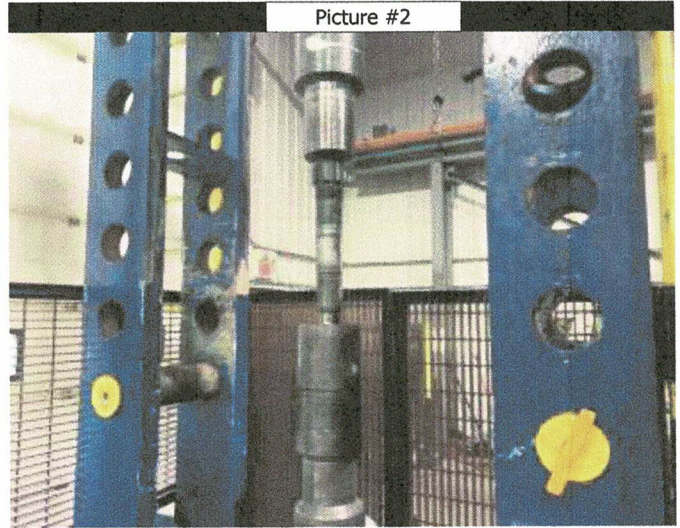
- Spectrolite BIB-150P (BL-30-00 - 1910553) Calibration Due: 30-Jul-2022
- DCM Wet Bench (WB-02-00 - 37941) Calibration Due: 05-Apr-2022
- Krautkramer USN-58L SW (USU-23-00 - 023K45) Calibration Due: 03-Jun-2022
- 0.250" - 1.000" 4 Step Curve (UT-CB-74-00 - UT-CB-74-00) Calibration Due: 31-Dec-2099
- Digital Vernier Caliper (DVC-34-00 - 0012982) Calibration Due: 07-Jun-2022
- Magnaglo 14A Fluorescent Magnetic Particles Batch #21E020



Picture #1



Picture #2



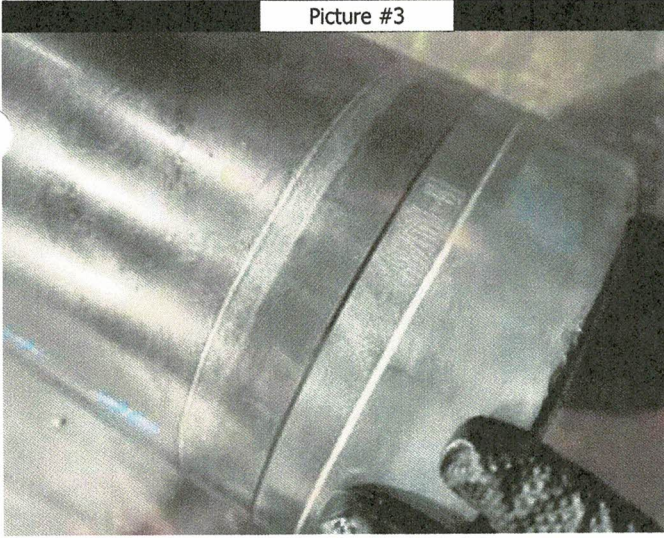
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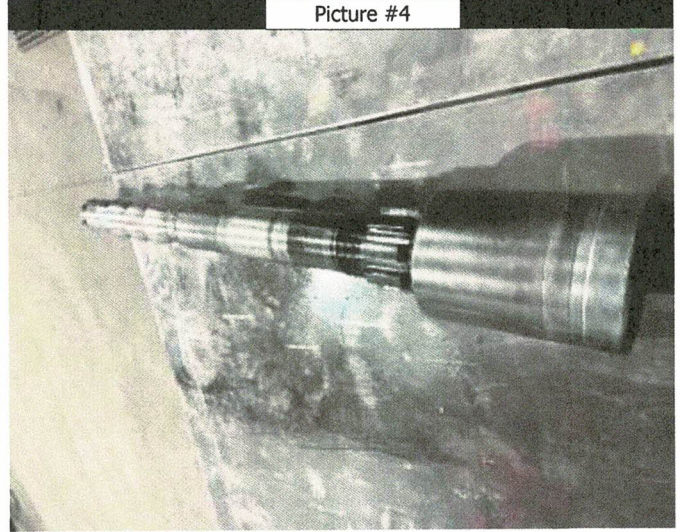
Rees NDT Records

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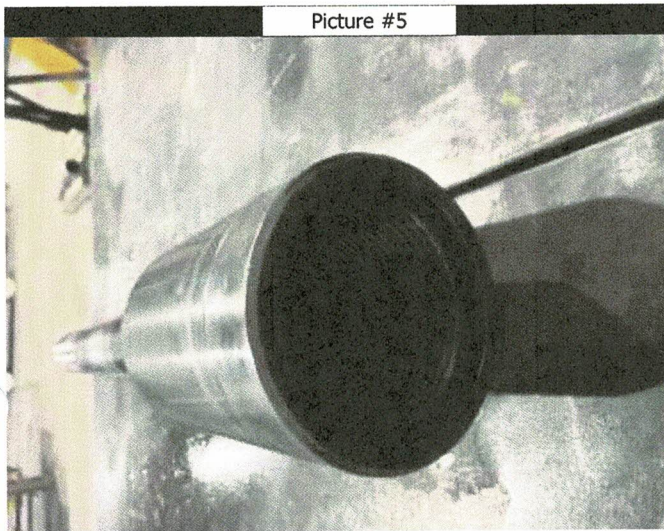
Picture #3



Picture #4



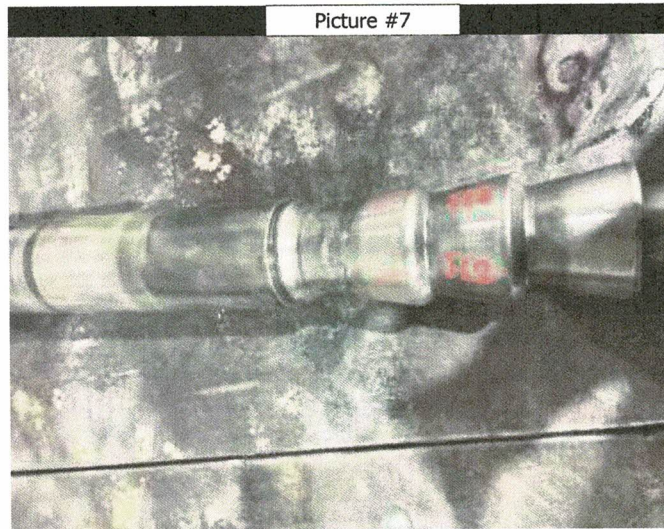
Picture #5



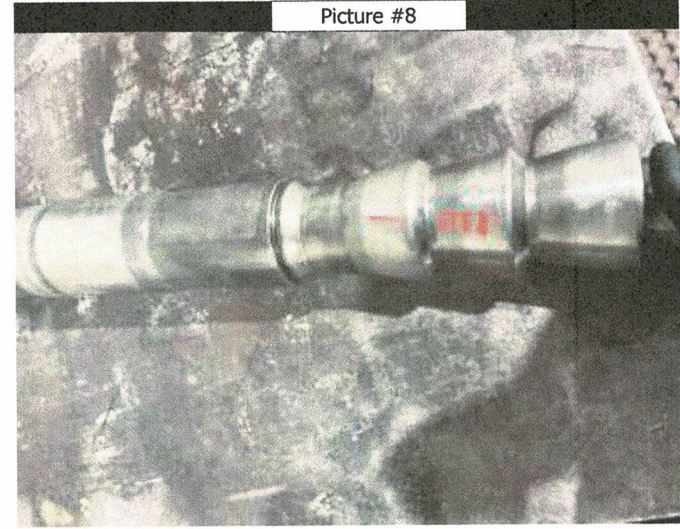
Picture #6



Picture #7



Picture #8



Calibrated Equipment Used Blacklights: BL-30-00 Wet Benches: WB-02-00 UT Machines: USU-23-00 Cal Blocks: UT-CB-74-00 Digital Calipers & Micrometers: DVC-34-00

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