



INSPECTION SERVICES AND ENGINEERING CERTIFICATION

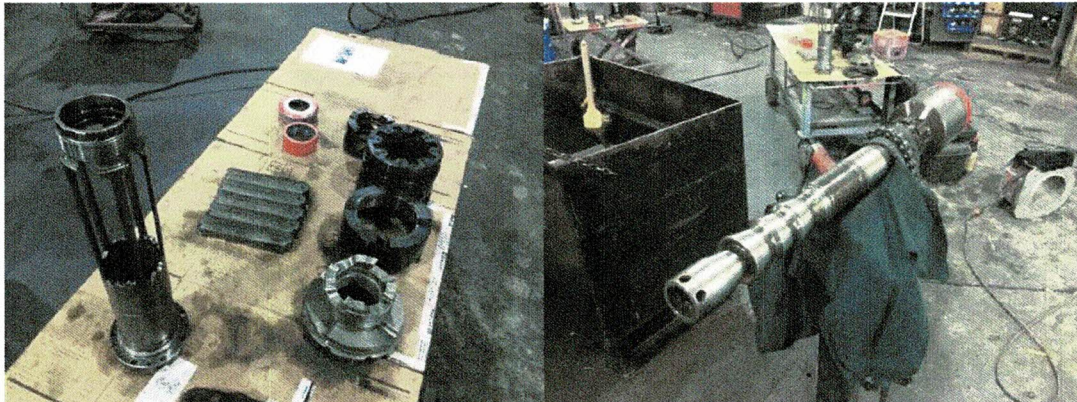
AB: 780.870.1547 SK: 306.250.9294 Head Office Mail: P.O. Box 10524 Lloydminster, AB T9V 3A6

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/REPORT#:	KSV010/IDX-3252
EQUIPMENT:	Volant Tool	MAKE/MODEL:	Volant CRTi2-4.5
RATING:	N/A	SERIAL NUMBER:	KSV010

EQUIPMENT PHOTOS



INSPECTION RESULTS

ACCEPTABLE:	X	REJECTED:	DATE OF INSPECTION:	April 11, 2023
TECHNICIAN:		COMMENTS:		
		Part: Serial#:		
		Mandrel 82304-03-4437A01-06		
		Cage 81325-4435A17-09		
		Upper Cam 81208-3J7423-01		
		Lower Cam 81221-4437A05-13		
		Cam Latch 81212-4437A06-10		
		Cam Int 80942-4437A03-13		
		Die - 80980-01-4488A01-33		
		Die - 80980-01-4400A02-65		
		Die - 80980-01-4488A01-31		
		Die - 80980-01-4400A02-61		
		Die - 80980-01-4488A01-29		
		Material Thickness: 0.885/0.887/0.888/0.890/0.889		
		REPAIRS:		

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.

HN-INCLUSION P-POROSITY IUC-INTERNAL UNDERCUT EUC-EXTERNAL UNDERCUT S-SLAG C-CRACK I-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: 17-Apr-23

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

REES NDT PO NUMBER: R73581

CLIENT PO NUMBER:

REES NDT WO NUMBER: 204558

INSPECTION CERTIFICATE

CERTIFICATION OF: CRT Mandrel

MAKE: Volant

MODEL: CRTi2-4.5

SERIAL NUMBER: 82304-03-4437A01-06

UNIT NUMBER: NA

CAPACITY: 120 ton

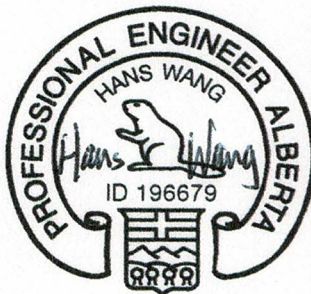
OWNER: K & S Power Tongs

Rees NDT 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 #204558. 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.

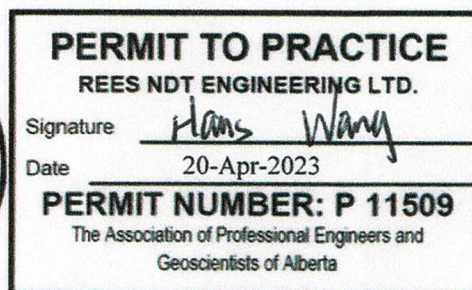
The undersigned Engineer reviewed all the inspection reports and has issued this certificate after all required repairs (if any) were completed. In the undersigned Engineer's opinion, the CRT MANDREL may be returned to service and is safe to use within the original manufacturer's specifications. The 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:



20-Apr-2023



Inspected By: J. House CGSB #20221 (MPI II) SNT #028 (MPI II) R. Mercado K. Gejdos Millwright (J-09-31585) Machinist (J-11-16754) J. Ibarbia

Non-destructive Testing · Wall Thickness Testing · Hardness Testing · Crane & Picker Certification · Drilling Rig Certification



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LOAD TEST CERTIFICATE

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

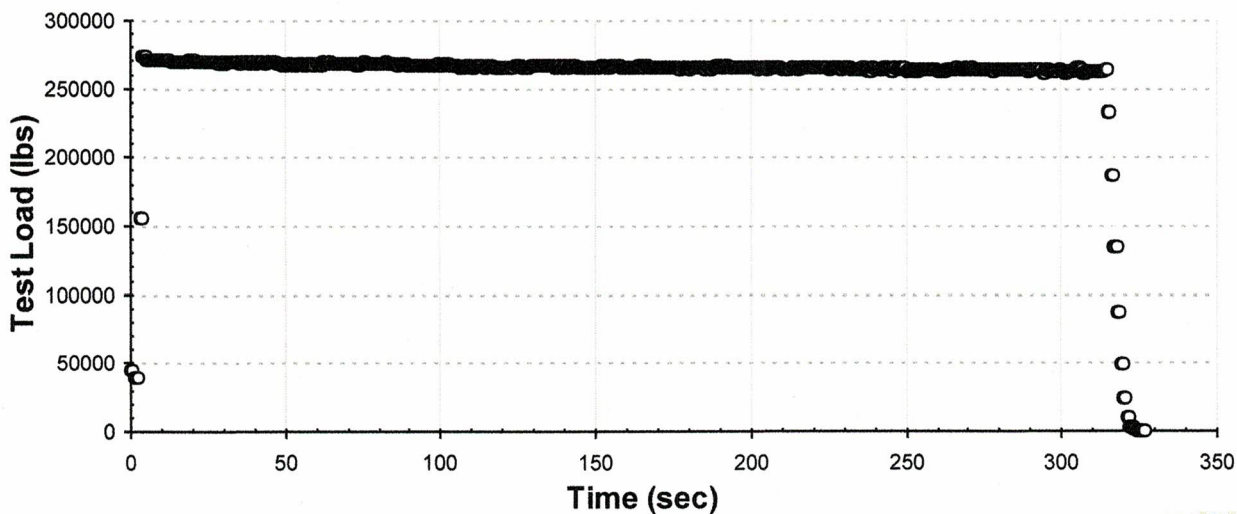
Date 17-Apr-23
Workorder # 204558
Purchase Order# Ksv010

Contact Name:	Chris	Phone #:	(780) 872-8240
Item:	CRT Mandrel	Location:	Rees NDT Shop, Grande Prairie
Make:	Volant	Model:	CRTi2-4.5
Serial Number:	82304-03-4437A01-06	Unit:	NA
Capacity:		120 ton	

Proof Load Test 264000 lbs
Test Method: Proof 1.10

Test Date 17-Apr-23
Peak Load 273687 lbs

Required Duration (sec) 300
Passed ☒



DELAYED USE	
Date of 1st Use:	_____
Job #:	_____
Signed By:	_____





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



- Non-Destructive Testing • UT MPI LPI
- Wall Thickness Testing • Hardness test
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15612-89 Street Grande Prairie AB T8V 2N8

email: ronvader@reesndt.com

Consigned to K & S Power Tongs

Date 17-Apr-23

Address 3614 63 Avenue Close
Lloydminster AB
T9V 2W1

Workorder 204558

Location Rees NDT Shop, Grande Prairie

Purchase Order# Ksv010

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:	82304-03-4437A01-06	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: 0.835", 0.837", 0.836", 0.833", 0.833" Average Reading: 0.835"

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-32-00 Coils: C-22-00 UT Machines: USU-23-00 Cal Blocks: UT-CB-75-00 Digital Calipers & Micrometers: DVC-24-00

Inspected By: J. House CGSB #20221 (MPI II) SNT #028 (MPI II) R. Mercado K. Gejdos Millwright (J-09-31585) Machinist (J-11-16754) J. Ibarbia

Rees NDT Records

Received by:

AR = 0% = 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:

-Spectroline B100 Blacklight (BL-32-00 - -) Calibration Due: 28-Jul-2023

-8.5" DC Smith Drilco MMF (C-22-00 - 0369) Calibration Due: 25-Aug-2023

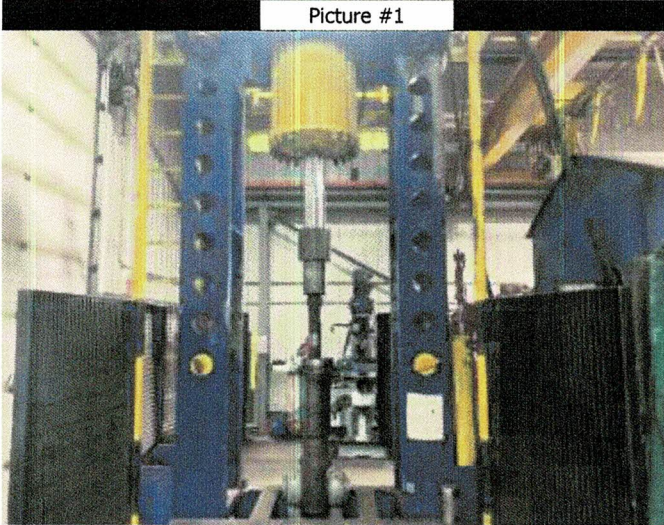
-Krautkramer USN-58L SW (USU-23-00 - 023K45) Calibration Due: 03-Jun-2023

-0.250" - 1.000" 4 Step Curve (UT-CB-75-00 - UT-CB-75-00) Calibration Due: 31-Dec-2099

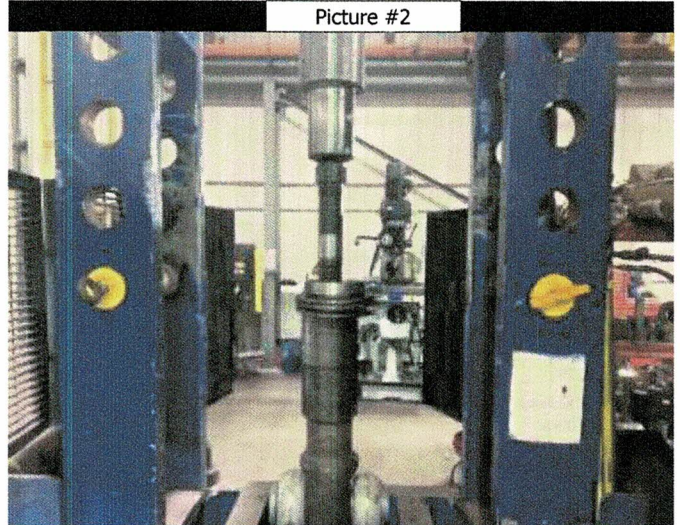
-Digital Vernier Caliper (DVC-24-00 - 7007630) Calibration Due: 17-Jun-2023

-Magnaglo 14A Fluorescent Magnetic Particles Batch #21K009

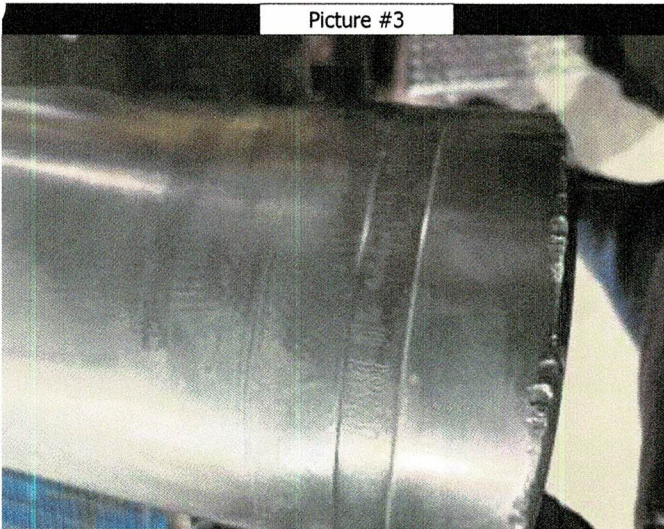
Picture #1



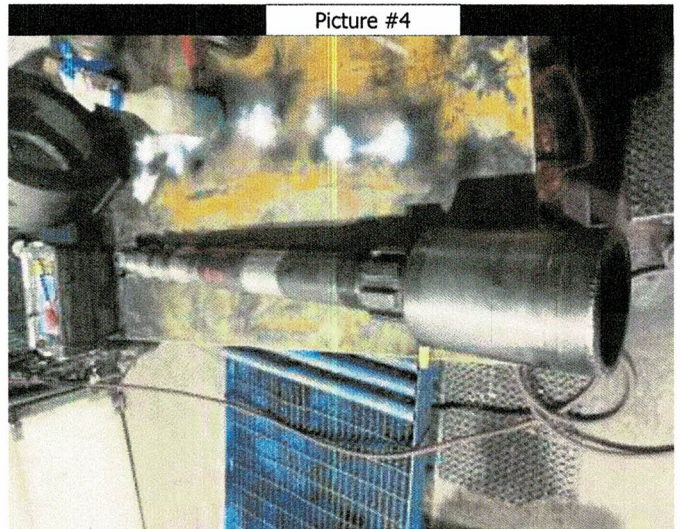
Picture #2



Picture #3



Picture #4



Calibrated Equipment Used Blacklights: BL-32-00 Coils: C-22-00 UT Machines: USU-23-00 Cal Blocks: UT-CB-75-00 Digital Calipers & Micrometers: DVC-24-00

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Rees NDT Records

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Workorder # 204558

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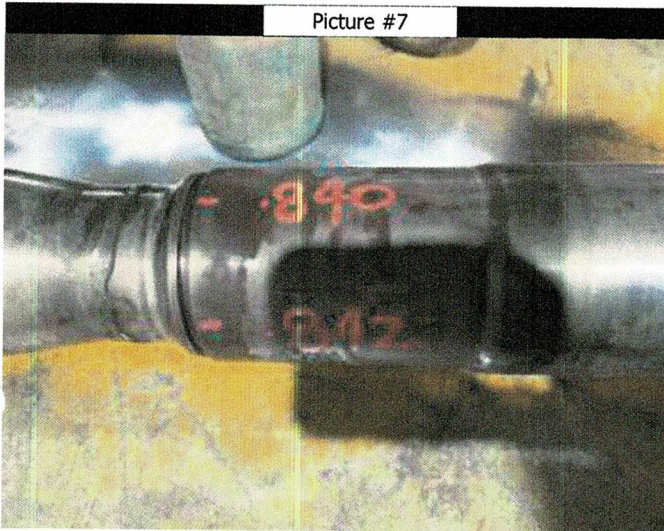
Picture #5



Picture #6



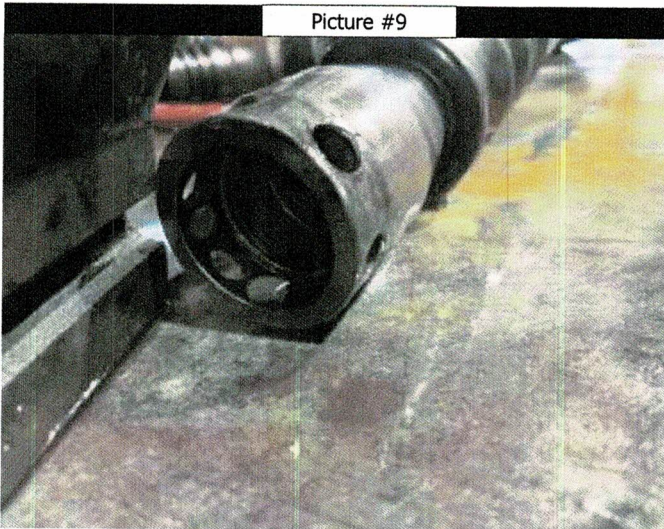
Picture #7



Picture #8



Picture #9



Calibrated Equipment Used Blacklights: BL-32-00 Coils: C-22-00 UT Machines: USU-23-00 Cal Blocks: UT-CB-75-00 Digital Calipers & Micrometers: DVC-24-00

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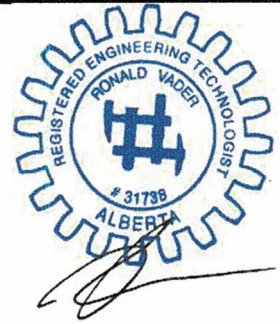
Rees NDT Records

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Workorder # 204558

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