Owner's Manual

C170-A2 Hydraulic Steel Squeeze Off Tool



Phone (905) 695-9900

Toll Free 1 (888) 737-3668

54 Audia Crt. Vaughan, ON, Canada L4K 3N4

DO NOT OPERATE THESE TOOLS UNLESS THESE INSTRUCTIONS HAVE BEEN CAREFULLY READ AND UNDERSTOOD

SAFETY WARNING:

DO NOT OPERATE THESE TOOLS UNLESS THESE INSTRUCTIONS HAVE BEEN CAREFULLY READ AND UNDERSTOOD. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN DAMAGES, INCLUDING WITHOUT LIMITATION DEFECTS, DETERIORATION, WEAR, ERROR, FAILURE OF THE SQUEEZE OFF TOOL, OR INJURY, INCLUDING WITHOUT LIMITATION DEATH AND INCAPACITATION. FOOTAGE TOOLS INC. EXPRESSLY DISCLAIMS ANY AND ALL LIABILITY FOR DIRECT, INDIRECT, INCIDENTAL, SPECIAL, BODILY, EXEMPLARY OR DAMAGES OF ANY KIND, WHETHER FORESEEABLE OR UNFORESEEABLE, ARISING OUT OR IN CONNECTION WITH THE FAILURE TO COMPLY WITH THIS OWNER'S MANUAL.

WARNING:

- Do not exceed the recommended squeeze and release rates. Temperatures below 32°F. require slower squeezes and releases. Releases are more critical than squeezes; thus, slower rates are required.
- When performing a squeeze, stay a minimum of 12" or 3 times the pipe diameter, whichever is greater f r o m fittings, fusions or previously squeezed pipe.
- Ensure the grounding system is properly planted in the soil to reduce the chances of static discharge.
- Do not modify or alter the tool in any way. Only use Footage Tools replacement parts provided by the manufacturer or authorized distributor.
- Use extreme caution when operating the tool near live electrical wires, buried utilities, or other hazards.
- In case of malfunction, immediately stop using the tool and contact a qualified technician for inspection and repair.

MAINTENANCE

Ensure the tool is in good operating order by routinely:

Inspect the power screw for dirt. Clean and lubricate	*Clean and lubricate*
Inspect the power screw thread for damage.	*Repair or replace as needed*
Inspect the tie rods for dirt and/or damage	*Clean, repair or replace as needed*
Inspect the squeeze bars for surface damage	Replace if needed
Inspect the Bottom Squeeze Bar pockets (2) for debris	Clean as needed

DO NOT OPERATE THESE TOOLS UNLESS THESE INSTRUCTIONS HAVE BEEN CAREFULLY READ AND UNDERSTOOD

SAFETY WARNING:

WARNING:

- WHEN OPERATING THIS TOOL, SAFETY EQUIPMENT INCLUDING SAFETY GLASSES ARE REQUIRED
- BEFORE PERFORMING A SQUEEZE, CLEAN THE POCKETS ON UNDERSIDE OF LOWER BAR AND WHERE THE SIDE SHAFT WILL CONTACT THE LOWER BAR. REINSPECT AFTER TOOL IS LOWERED INTO POSITION ON PIPE JUST PRIOR TO SQUEEZE
- ENSURE THE GROUNDING SYSTEM IS CONNECTED TO THE TOOL AND PLANTED IN THE MOIST SOIL TO REDUCE CHANCES OF STATIC DISCHARGE
- FOR HYDRAULIC SQUEEZE TOOLS: INSPECT HYDRAULIC HOSES FOR SIGNS OF DAMAGE OR CUTS, REPLACE IF NECESSARY. ENSURE HYDRAULIC FITTINGS ARE FULLY ENGAGED
- BEFORE PERFORMING A SQUEEZE, ENSURE THE PIPE IS CENTRED BETWEEN SIDE SHAFTS AND THE TOOL IS IN AN UPRIGHT POSITION
- WHEN PERFORMING A SQUEEZE, STAY A MINIMUM 12” OR 3 TIMES THE PIPE DIAMETER, WHICHEVER IS GREATER, AWAY FROM FITTINGS OR PREVIOUSLY SQUEEZED AREAS
- FOR HYDRAULIC SQUEEZE TOOLS: BEGIN TO ENGAGE THE SAFETY LOCK DOWN BOLTS WHEN THE UPPER BAR IS APPROXIMATELY ONE INCH FROM TOUCHING THE GAUGE STOP
- FOR HYDRAULIC SQUEEZE TOOLS: ENSURE YOU READ AND UNDERSTAND HOW TO OPERATE THE NEEDLE VALVE IF INSTALLED ON HYDRAULIC PUMP
- WHEN SQUEEZING HDPE PIPE, DUE TO THE NATURE OF THE MATERIAL, IT MAY BE NECESSARY TO DOUBLE SQUEEZE AND VENT TO ATMOSPHERE BETWEEN THE SQUEEZED SECTIONS IN ORDER TO ACHIEVE FLOW CONTROL

DO NOT OPERATE THESE TOOLS UNLESS THESE INSTRUCTIONS HAVE BEEN CAREFULLY READ AND UNDERSTOOD – PPE MUST ALSO BE WORN AT ALL TIMES

This Footage Tools' hydraulic steel squeeze off tool is designed to squeeze steel natural gas pipes from 1/2" to 2"

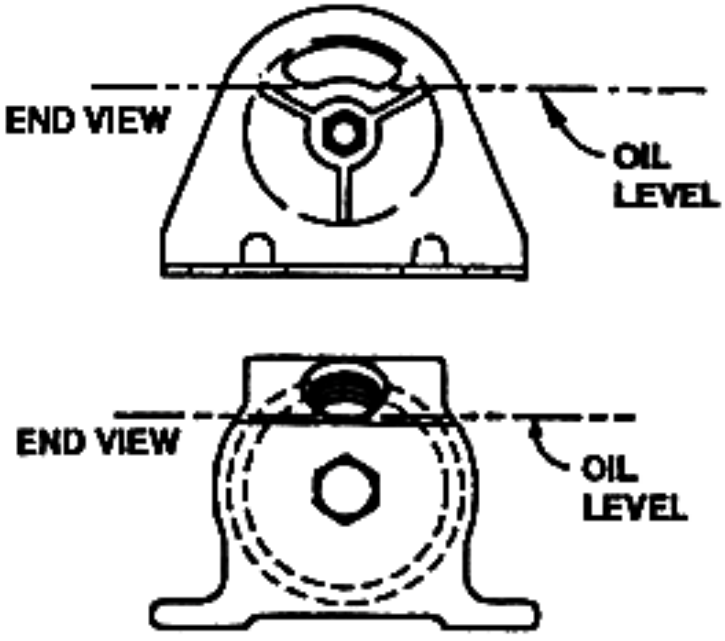
The hand pump contains a 2-position control knob. Rotating the pump control valve forward (towards hose), will allow oil to be pressurized/pumped through the hose into the tool to start the squeeze (close) operation. Similarly, rotating the control valve knob fully backward (towards fill cap) will allow oil to return from the tool to release (open) it. A bypass valve, set at 10,000 PSI, is built into the pump to prevent over-pressurization.

PRELIMINARY ASSEMBLY:

The hand pump is filled with ISO 32 weight hydraulic oil.

TO CHECK OR REFILL, THE PUMP MUST BE CONNECTED TO TOOL AND TOOL MUST BE IN THE FULLY OPEN POSITION.

Ensure pump control knob is rotated backwards to remove any pressure in system. Failure to follow this instruction may result in overfilling the reservoir – this could result in reservoir failure due to excessive pressure and possible injury. Remove cap and fill to the indicated level with the pump level and resting horizontally on the base and recap.



Cleanliness is critical while checking and refilling. Use a funnel with a filter. Do not allow any dirt to enter the reservoir.

DO NOT OPERATE THESE TOOLS UNLESS THESE INSTRUCTIONS HAVE BEEN CAREFULLY READ AND UNDERSTOOD

OPERATING INSTRUCTIONS:

A. Installation of Pipe

1. Inspect entire tool to ensure that it is clean and free from any dirt that may hinder proper operation before each use. Pay particular attention to side shaft slots and the bottom bar locking mechanism and hydraulic connections. *(Figure 1)* Clean before each use.

1. Carefully inspect the tool, hydraulic hose, gauge, fittings and pump to ensure there are no leaks and or damage. Ensure pump control knob is fully rotated backwards. *Make certain both hydraulic couplings are clean and properly connected together. (Figure 2) shows an incomplete connection.*

To eliminate any possibility of accidental disconnection, the threaded collar on the fitting must be fully threaded on to enable pressure to reach the tool - tighten fitting by hand until you can no longer see ORANGE paint on the inside collar.

(Figure 3) shows a complete connection.

3. With the pump control knob into the released position (rotated backwards) the tool should be fully open.

3. *Lift the ring/pin to open bottom bar, swing it to open position and place the tool over the pipe (Figure 1) Now swing bottom bar back into place and make certain the bar is fully engaged on the side shaft – Place the pin/ring back in the locking position. (Figure 4).*



Figure 1



Figure 2



Figure 3



Figure 4

DO NOT OPERATE THESE TOOLS UNLESS THESE INSTRUCTIONS HAVE BEEN CAREFULLY READ AND UNDERSTOOD

OPERATING INSTRUCTIONS:

B. Squeezing the Pipe

1. Make sure the pipe is centrally located between the bars. Use the orange arrow on the upper bar to help center the pipe *(Figure 5).* This will ensure a proper squeeze and will prevent damage to the tool and or pipe.

1. Turn the knob on the hydraulic pump to the squeeze position (fully forward) and pump the handle to advance the squeeze bars toward the pipe. Ensure the tool remains positioned centrally and perpendicular to the pipe. If this is not done, tool and or pipe damage may result. During the squeeze off, keep the tool at right angles to the pipe. *(Figure 6 & 7).*

1. Continue squeezing the pipe until the flow is shut down or until the bars came in contact with the safety stops; whichever comes first. Note: once bars have reached the stops, DO NOT CONTINUE PUMPING, as damage to the tool and or pipe may result.

1. Once the pipe has been squeezed completely, lock the bars together by lifting up and threading the locking collar until it's secure to the upper shoulder ring *(Figure 8).*

1. The tool is now safely secured to the pipe and if required, the pump can be disconnected from the tool.

NOTE: make note of the gauge pressure reading then rotate pump control knob backwards to release system pressure BEFORE disconnecting the fittings.

6. Perform desired work on the pipe.



Figure 5



Figure 6



Figure 7



Figure 8

DO NOT OPERATE THESE TOOLS UNLESS THESE INSTRUCTIONS HAVE BEEN CAREFULLY READ AND UNDERSTOOD

OPERATING INSTRUCTIONS:

C. Releasing the Pipe

1. If the hydraulic pump has been disconnected, re-connect, as per procedure section A (step 2) on page # 2. Once the hydraulic pump is securely connected, turn the safety locking collar counter clock-wise. Note: It may be necessary to apply slight hydraulic pressure (return to noted pressure) on the tool, in order to free the locking collar. Once the collar is disengaged and is fully lowered so that it is sitting the sliding bar, the releasing process can start *(Figure 9).*



Figure 9

2. With the pipe squeezed and the pump control valve (fully forward) in the squeeze position, very slowly turn the control valve towards the release position (fully backwards) while watching the squeeze bars. As soon as the squeeze bars start to move, return the control valve to the squeeze position. This will stop the bars from releasing/opening. At this moment, any media left in the pipe will be released outside (if open end of pipe is exposed). If the flow stops shortly after this, the tool can be safely removed from the pipe. Leave the control valve in released position and allow the tool jaws to fully open. Once jaws are fully open, the tool should be in the most open position possible.

Failure of tool to fully open on its own, may be either from the decrease of nitrogen pressure in the cylinder, from an excessive quantity of oil in the pump reservoir or dirty cylinder rod guide slots. See Preliminary Assembly (page # 1) or Maintenance (page # 5).

3. To remove the tool from the pipe, pull the pin/ring upwards and swing the bottom bar to disengage from the shaft. After this, the tool may be safely removed from the working area.

DO NOT OPERATE THESE TOOLS UNLESS THESE INSTRUCTIONS HAVE BEEN CAREFULLY READ AND UNDERSTOOD

OPERATING INSTRUCTIONS:

D. Safety Precautions

⚠ WARNING: When squeezing any sized steel pipe, DO NOT continue to squeeze after the bars have come in contact with the safety stops. This may cause damage to the tool *(Figure 10).*



Figure 10

⚠ WARNING: When performing a squeeze, the tool must be centered on the pipe, so the pipe will be in the middle of the jaws. If it is necessary to perform a squeeze on a pipe that was previously squeezed, position the tool at least 3 diameters (or minimum 12") from the previous squeeze, tees, joints, couplings, elbows, etc. to ensure the tool will remain perpendicular to the pipe during the squeezing process *(Figure 11).*

⚠ WARNING: Keep away from any high-pressure hydraulic leaks. A high-pressure jet of oil can cause serious injury. Repair immediately any damaged or suspect parts or remove tool from service to prevent any injuries. ALWAYS WEAR YOUR PPE.

The C170 is designed to squeeze steel pipe - it is advised that users do in-house testing to determine what estimated hydraulic pump gauge pressure(s) might be required for the steel pipe within the utilities buried infrastructure network so that the potential for cutting the pipe is greatly reduced.



Figure 11

IMPORTANT NOTE: This tool is NOT to be used on an node less risers

DO NOT OPERATE THESE TOOLS UNLESS THESE INSTRUCTIONS HAVE BEEN CAREFULLY READ AND UNDERSTOOD

MAINTENANCE

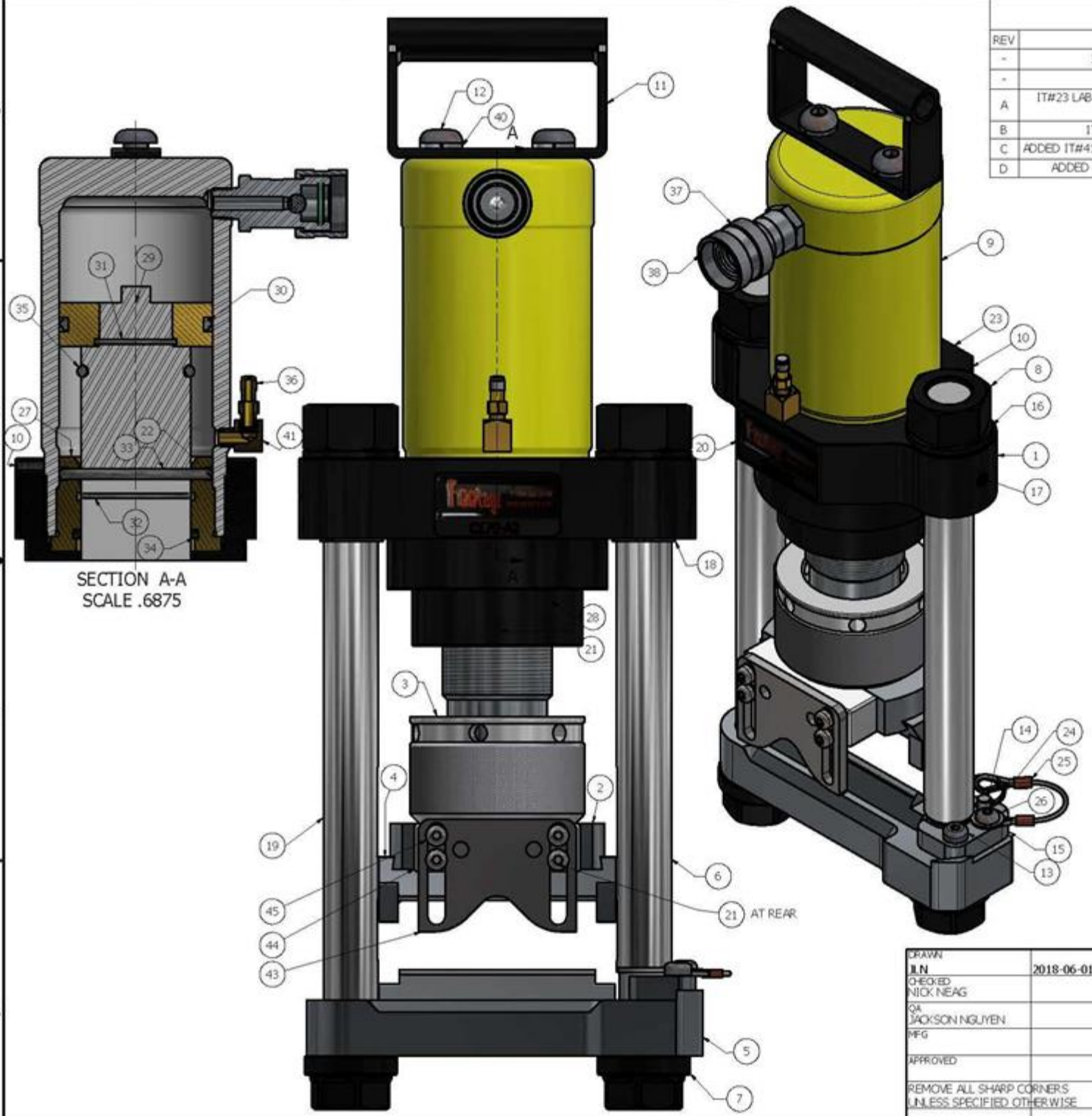
This section contains maintenance instructions for the tool. Do not attempt any maintenance which you do not fully understand, nor that you cannot do accurately and safely with the tools and equipment available to you. If you encounter a problem that you do not understand or cannot solve, contact your Footage Tools dealer.

Ensure the tool is in good operating order by routinely checking the following:

Inspect pump fluid level (See Preliminary Assembly)	*Top up as needed (tool must be connected to pump and tool must be in fully open position)*
Lubricate pump pivot and rubbing points	*Use a light motor oil or grease.*
Bleed air from hydraulic system.	*Position tool lower than the pump. With no pipe in tool, open and close the tool several times to release any air into the reservoir. Top up the pump fluid level if required.*
Drain, flush and fill pump reservoir.	*Remove filler cap, drain fluid. Re-fill with a clean good quality ISO 32 oil and re-cap. NOTE: pump must be connected to tool and tool must be fully open to determine correct oil level.*
Inspect cylinder ram for damage.	*Replace hydraulic ram if needed*
Inspecting tool, pump, gauge and hoses for oil leakage.	*Tighten, repair or replace as required*
Inspect squeeze bars for damage.	*Replace if needed*
Inspect locking mechanism for damage.	*Replace if needed*
Inspect locking ring/pin/cable for damage.	*Replace if needed*
Inspect side shafts slots for dirt or debris.	*Clean before each use.*
Inspect cylinder rods for dirt.	*Clean as needed.*
Inspect returning feature in cylinder	*Fully open the tool from the closed position to ensure cylinder is retracting properly. With tire gauge, check pressure - should be 110-120 psi. Top up as needed.*

SPECIFICATIONS

GENERAL	***C165***
Max Steel SCH40 Pipe Diameter:	*2”*
Weight: tool including 14 ft handle	*47 lbs.*
Operating Pressure (max):	*10,000 psig*
OPTIONAL ACCESSORIES	
Static grounding kit (10')	*C615-HD110*



REVISION HISTORY				
REV	DESCRIPTION	ECN	DATE	APPROVED
-	ISSUED FOR PRODUCTION	1966	31MY18	NN
-	ADDED IT#40	1966A	28AU18	NN
A	IT#23 LABEL-008 WAS LABEL-009, IT#13 WAS 99-114-01-0504	2010	19SE19	JLN
B	IT#16 WAS 99-141-0M-0017	2020	05AU20	NN
C	ADDED IT#41 99-214-02-0202, 1/8NPTM X F ELBOW	2041	31MY18	NN
D	ADDED ITEMS 43-45 (CENTERING PLATE)	2076	08NO22	JLN

Parts List			
QTY	PART NUMBER	DESCRIPTION	ITEM
4	99-114-01-0408	Shoulder Screw 5/16 X 1" LG	45
1	C170-32	SPACER PLATE	44
1	C170-21	CENTERING PLATE	43
1	99-214-02-0202	1/8NPT F X 1/8NPTF BRASS ELBOW	41
2	99-140-00-0008	1/2" Lock Washers	40
1	C170-BOX	TRANSP. CONTAINER (NOT SHOWN)	39
1	D30-300C	METAL DUST CAP	38
1	D30-300	FEM. HYD. CONNECTOR, THREADED	37
1	C600R-23	AIR NIPPLE, 1/8 NPT	36
1	C170-65	STEEL RING, 0.23 DIA X 1.95 O.D	35
1	C1200-18	WIPER SEAL, AN23	34
1	99-490-00-0335	O-Ring #335	33
1	99-490-00-0140	O-Ring #140	32
1	99-490-00-0128	O-Ring #128	31
1	C170-64	PISTON T SEAL FOR 3.125 CYL	30
1	C170-63	PISTON	29
1	C170-62	CYLINDER ROD	28
1	C170-61	CYLINDER CAP	27
1	99-141-00-1000	FLAT WASHER, 5/16 SMALL O.D	26
1	C36S-29	LANYARD - FOR LOCKING PIN	25
1	99-104-00-0508	BHCS, 5/16-18 X 1/2"LG	24
1	LABEL-008	OWNER MANUAL LABEL, 10K WARN	23
1	C170-67	#140 BACK UP RING	22
4	99-150-00-0406	SET SCREW, 1/4-20 X 3/8" LG	21
1	LABEL-012	LABEL, FOOTAGE DECAL	20
1	C170-60	SIDE SHAFT - LEFT	19
2	C170-59	RETAINER RING	18
2	99-150-04-0508	SET SCREW, DOG PT 5/16-18 X 1/2"	17
2	C170-67	FLAT WASHER, 1.135 X 1.955 O.D	16
1	C170-58	LOCKING PLATE	15
1	C170-57	Q.R. PIN, 5/16 X 1.0" LG	14
1	99-114-01-0506	SHOULDER BOLT, 3/8 X 3/4" LG	13
2	99-104-00-0812	BHCS, 1/2-13 X 3/4" LG	12
1	C170-09	HANDLE	11
2	99-150-00-0408	1/4-20 x 1/2 SET SCREW	10
1	C170-56	CYLINDER 39Tn	9
2	99-121-080017	1-1/8-12UNF, HEX NUT	8
2	C170-55	ROD NUT	7
1	C170-54	SIDE SHAFT - RIGHT	6
1	C170-53	BOTTOM JAW	5
1	C170-52	TOP JAW	4
1	C170-03	LOCKING NUT	3
1	C171-51	CYLINDER ROD EXTENSION	2
1	C170-50	TOP BAR	1

DRAWN JLN	2018-06-01	**FOOTAGE TOOLS INC.**
CHECKED NICK NEAG		TITLE: **C170-A2 ASSEMBLY DWG 2" SCH40/80 SQUEEZE OFF TOOL**
QA JACKSON NGUYEN		
MFG		
APPROVED		
REMOVE ALL SHARP CORNERS UNLESS SPECIFIED OTHERWISE		SIZE C / DWG NO C170-A2 / REV D
		SCALE NTS / SHEET 1 OF 1

DO NOT OPERATE THESE TOOLS UNLESS THESE INSTRUCTIONS HAVE BEEN CAREFULLY READ AND UNDERSTOOD

FOOTAGE TOOLS INC. WARRANTY

FOOTAGE TOOLS INC, hereinafter sometimes referred to as “Manufacturer” warrants each new PE Pipe Squeeze Off Tool of its own manufacture to be free from defects in material and workmanship, under normal use and service for the life of the tool after delivery to the end user. **Warranty is void unless warranty registration card is completed in full and returned to FOOTAGE TOOLS INC within thirty days from the date of purchase.** This warranty and any possible liability of **FOOTAGE TOOLS INC** hereunder is in lieu of all other warranties, expressed, implied, or statutory, including, but not limited to, any warranties of merchantability or fitness for a particular purpose.

The parties agree that the Buyers **SOLE AND EXCLUSIVE REMEDY** against Manufacturer, whether in contract or arising out of warranties, representations, instructions, or defects shall be for the replacement or repair of defective parts as provided herein. In no event shall Manufacturers liability exceed the purchase price of the product. The Buyer agrees that no other remedy (including, but not limited to, incidental or consequential loss) shall be available to him. If, during the warranty period, any product becomes defective by reason of material or workmanship and Buyer immediately notifies Manufacturer of such defect, Manufacturer shall, at its option, supply a replacement part or request return of the product to its plant in Toronto, Canada. No parts shall be returned without prior written authorization and a return goods authorization number from Manufacturer, and this Warranty does not obligate the Manufacturer to bear any transportation charges in connection with the repair or replacement of defective parts. The Manufacturer will not accept any charges for labor and/or parts incidental to the removal or remounting of parts repaired or replaced under this Warranty.

This Warranty shall not apply to any part or product which shall have been installed or operated in a manner not recommended by **FOOTAGE TOOLS INC,** nor to any part or product which shall have been neglected, or used in any way which, in the manufacturers opinion, adversely affects its performance; nor negligence of proper maintenance or other negligence, fire, or other accident: nor if the unit has been altered or repaired outside of a **FOOTAGE TOOLS INC** authorized dealership in a manner of which, in the sole judgement of **FOOTAGE TOOLS INC** affects its performance, stability or reliability: nor to any product in which parts not manufactured or approved by **FOOTAGE TOOLS INC** have been used, nor to normal maintenance services or replacement of normal service items. Equipment and accessories not of our manufacture are warranted only to the extent of the original Manufacturers Warranty and subject to their allowance to us, if found to be defective by them.

The original purchaser, user is responsible for "downtime” expenses and all business costs and losses resulting from a warrantable failure. **FOOTAGE TOOLS INC** specifically disclaims any responsibility for any damages of any kind or description, whether to property or person, in any way connected with or arising out of the use of **FOOTAGE TOOLS INC** products. **FOOTAGE TOOLS INC** reserves the right to modify, alter, and improve any product or parts without incurring any obligation to replace any product or parts previously sold with such modified, altered, or improved product or part.

No person is authorized to give any other Warranty, or to assume any additional obligation on the Manufacturers behalf unless made in writing, and signed by an officer of the Manufacturer.