

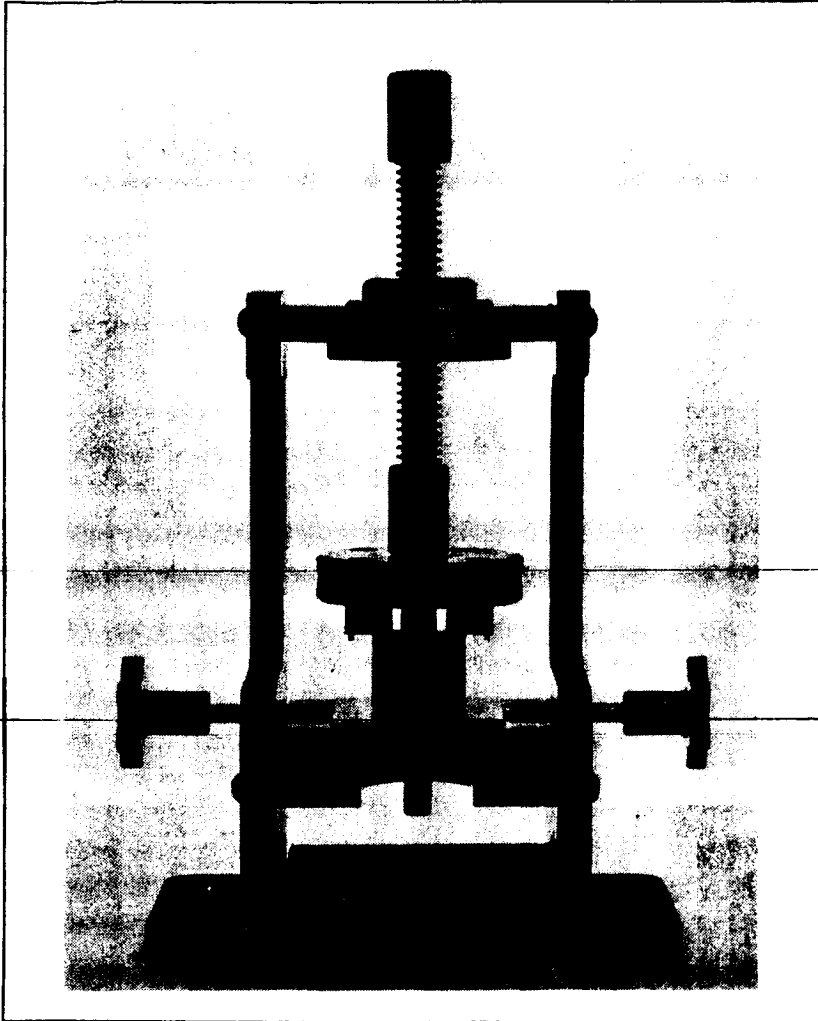


- 1730 MCPHERSON COURT, #10, PICKERING, ONTARIO L1W 3E6
PHONE (905) 839-6111 FAX (905) 839-7100
- 4455 ALASKA STREET, BURNABY, B.C. V5C 5T3
PHONE (604) 298-2933 FAX (604) 294-8131
- MONTRÉAL BUR: (514) 448-1221 FAX (514) 468-4653
CEL: (514) 592-1661

PULSE UNIT REPAIR FIXTURE

OPERATIONS MANUAL

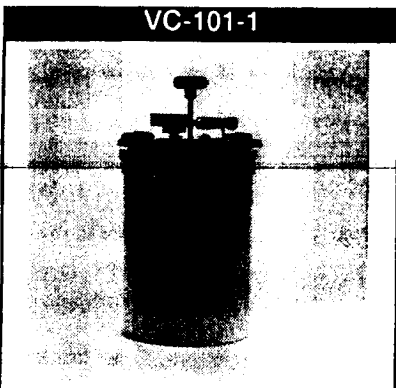
**PTRF-1-1
Universal Pulse Unit Repair Fixture**



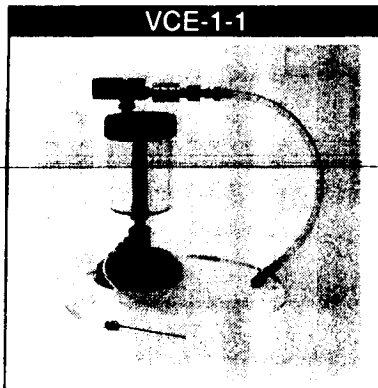
the PTRF-1-1 Universal Pulse Unit Repair Fixture in addition to our existing jigs and fixtures for pulse unit repair. The PTRF-1-1 was designed to repair all size pulse units, as well as saving time by mounting right on the repair person's bench. The PTRF-1-1 also eliminates the need for a hydraulic press.

- Convenient and Economical.

Additional equipment and fixtures available to aid in the repair of Pulse Tools.



Vacuum Fill Tank is used to refill the Pulse Unit with fluid. Use of the filler tank can save up to 75% of your time over hand filling.



Vacuum Extractor is used to remove the old burnt fluid out of the Pulse Unit. Use of the extractor gives you the ability to contain and dispose of the used pulse fluid properly. The extractor will draw the fluid out of a pulse unit in just a few seconds and save time in changing fluid.



Additional Fixtures are available to aid in repair of your pulse tools. See complete list on reverse.

REPAIR JIGS FOR UX, UXR & UX-T PULSE TOOLS

FOR TEFLON SEAL

MODEL NAME

178-319-8-1	}	UX-450	UX-500	UX-612
995-512-0-1		UX-622	A-50	A-60
178-350-6-1	}	UX-450D	UX-500D	UX-612D
995-512-0-1		UX-622D	A-50D	A-60D
194-319-3-1		UX-T900	UX-T1000	UX-T1300
199-319-6-1		UX-T1620		A-90
995-500-0-1		UXR-T2000		

JIG FOR PLACING ANVIL C/W DRIVING BLADES INTO LINER

MODEL NAME

190-440-6-1	UX-500	UX-602	UX-612
190-440-6-0	UX-620	UX-622	
194-440-2-1	UX-700	UX-800	
194-440-2-0			
194-440-3-1	UX-900		
194-440-3-0			
194-440-6-1	UX-1000	UX-1300	
194-440-6-0			
195-440-6-1	UX-1400	UX-1620	
195-440-6-0			
195-440-9-1	UXR-1820		
195-440-9-0			
194-440-8-1	UXR-2000		
194-440-8-0			
176-440-5-1	UXR-2400S		
176-440-5-0			
175-440-2-1	UXR-3000S		
175-440-2-0			

JIG FOR DISASSEMBLY & ASSEMBLY OF CASING CONNECTOR

195-036-4-5	UX-450	UX-500	UX-612
	A-50	A-60	

JIG FOR SETTING TORQUE ADJUSTER

195-907-3-1	UX-1000	UX-1300	UX-1400
	UX-1620		

JIG SET-IN O-RING

990-320-0-1	UX-500	UX-602	UX-620
	UX-800	UX-900	UX-612
	UX-622		

990-320-2-1	UX-700		
-------------	--------	--	--

990-971-0-1	UX-1000	UX-1300	UX-1400
	UX-1620	UXR-1820	

990-972-0-1	UXR-2000	UXR-2000S	UXR-2400S
	UXR-3000S		

JIG FOR REMOVAL OF BALL BEARING

FOR CYLINDER REAR PLATE

982-401-0-2	UX-500	UX-602	UX-612
982-402-0-2	UX-622	UX-620	UX-700
982-403-0-2	UX-800	UX-900	UX-1000
	UXR-3000S		

982-404-0-2	UX-1300		
982-951-0-2	UX-1400	UX-1620	UXR-1820
	UXR-2000	UXR-2000S	
982-104-0-2	UXR-2400S		

FOR CYLINDER FRONT PLATE

982-402-0-2	UX-500	UX-602	UX-612
982-403-0-2	UX-620	UX-622	
982-903-0-2	UX-700	UX-800	UX-900
982-951-0-2	UX-1000		
982-104-0-2	UX-1300		
982-205-0-2	UX-1400	UX-1620	UXR-1820
982-960-0-2	UXR-2000	UXR-2000S	
982-206-0-2	UXR-3000S		

JIG FOR PRESSING IN OF BALL BEARING

FOR CYLINDER REAR PLATE

982-401-0-1	UX-500	UX-602	UX-612
982-402-0-1	UX-622	UX-620	UX-700
982-403-0-1	UX-800	UX-900	UX-1000
982-404-0-1	UX-1300		
982-103-0-1	UX-1400	UX-1620	UXR-1820
	UXR-2000	UXR-2000S	
982-204-0-1	UXR-2400S		
982-205-0-1	UXR-3000S		

FOR CYLINDER FRONT PLATE

982-402-0-1	UX-500	UX-602	UX-612
982-403-0-1	UX-620	UX-622	
982-102-0-1	UX-700		
982-950-0-1	UX-800	UX-900	UX-1300
982-103-0-1	UX1000		
982-906-0-1	UX-1400	UX-1620	UXR-1820
982-205-0-1	UXR-2000	UXR-2000S	
982-206-0-1	UXR-2400S	UXR-3000S	

GLASS SYRINGE

915-176-0	3CC	ALL MODELS
J1416GX3	NEEDLE	

PULSE UNIT FLUID

1QTPF	ALL MODELS
-------	------------

UNIVERSAL REPAIR FIXTURE

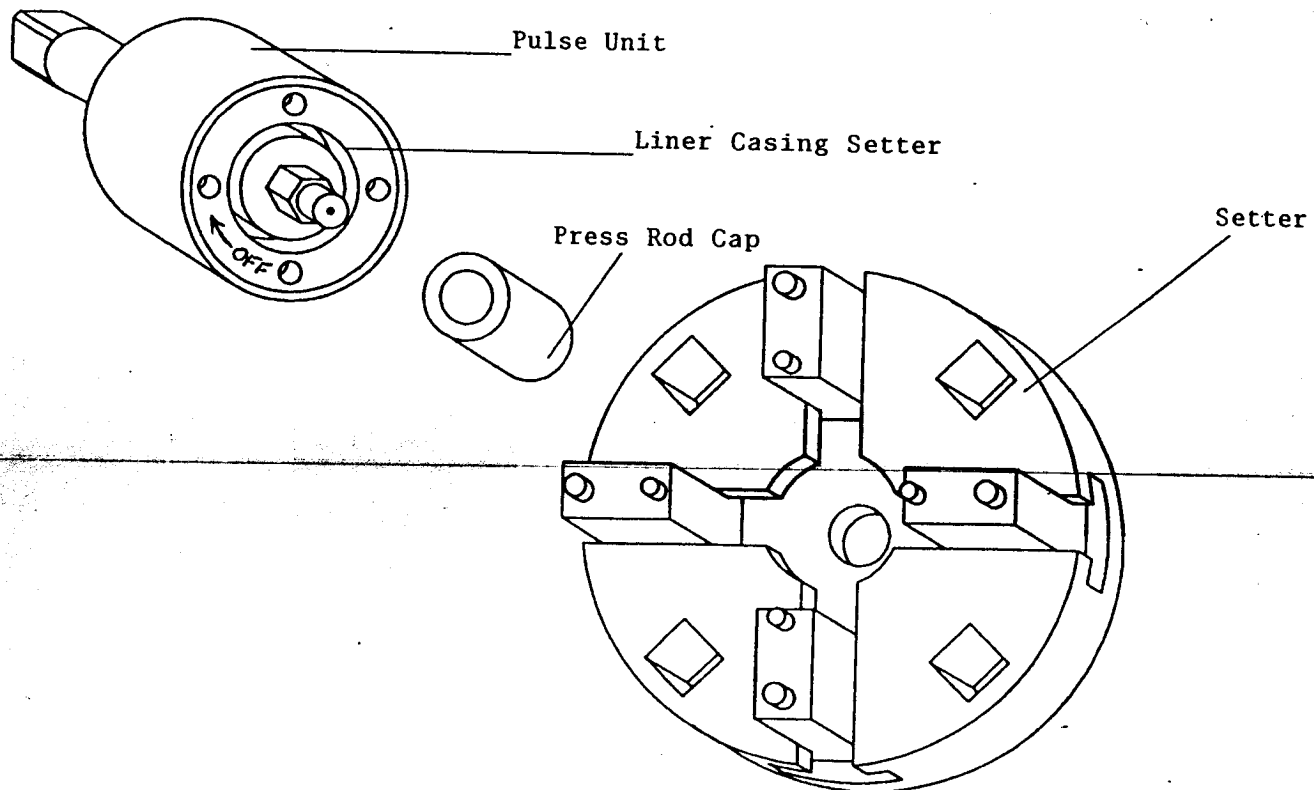
CAUTION

1. Make sure repair fixture is securely fastened to a sturdy work bench.
2. Make sure all nuts and bolts are tight.

PROPER USE OF THE REPAIR FIXTURE FOR DISASSEMBLY AND ASSEMBLY OF THE PULSE UNIT:

DISASSEMBLY

1. Set the pulse unit onto the setter. Line up the pins in the setter with the holes in the liner setter of the pulse unit. Make sure you use the right size pin for the hole size in the liner setter you are working with.
- NOTE: The smaller pins have different size ends.

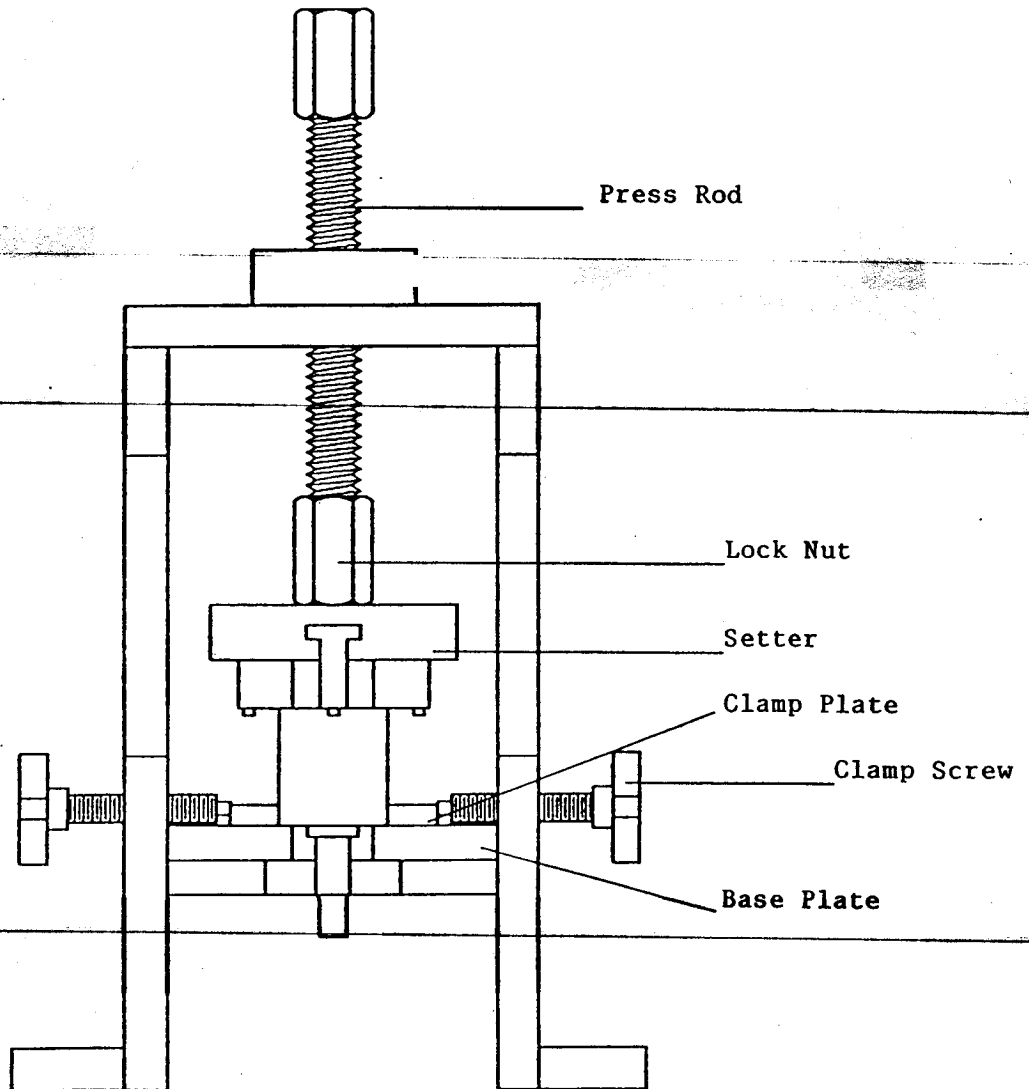


2. Place pulse unit and setter onto the plate of the repair fixture so that only the liner casing rests on the plate. Line up the holding plates with the flates on the pulse unit.
3. Thread the press rod down through the setter and onto the pulse unit. Thread locking nut down onto the setter so it just comes in contact with the setter. Now tighten the holding plates against the flates on the pulse unit.
4. Put a 1/2" breaker bar into one of the 1/2" square holes in the setter and turn the setter clockwise to loosen the liner casing setter of the pulse unit.
5. Now back the locking nut off of the setter and thread the press rod out of the setter. Turn the setter clockwise until the liner casing setter is free from the pulse unit.
6. Loosen the holding plates and remove the pulse unit from the repair fixture.

ASSEMBLY

1. Place the press rod cap into the setter.
2. Place the pulse unit liner casing setter down onto the setter and into the press rod cap. Line up the pins with the holes in the liner casing setter.
3. Place the pulse unit and setter onto the plate in the repair fixture.
4. Thread the press rod down through the setter and onto the press rod cap.
5. Tighten the holding plates against the flates on the pulse unit.
6. Torque the press rod to the recommended tonnage for the pulse unit being worked on. Note: See chart for the proper tonnage.
7. Thread the locking nut down onto the setter. This will keep the pins in the setter from slipping out of the liner casing setter.
8. Put a torque wrench with a 1/2" drive into the 1/2" square hole in the setter and tighten the liner casing setter counter clockwise to the recommended torque for the pulse unit being worked on. Note: See chart for the proper torque.
9. Loosen the locking nut and thread the press rod back out of the setter.
10. Loosen the holding plates and remove the setter and press rod cap from the pulse unit.
11. Remove the pulse unit from the universal repair fixture.

UNIVERSAL REPAIR FIXTURE



ASSEMBLY FOR PULSE UNIT

MODEL	FULL VOLUME IN PULSE UNIT (APPROX.)	VOLUME TO BE REMOVED FROM FULL VOLUME (APPROX.)	RECOMMENDED TIGHTENING TORQUE OF LINER CASING SETTER (APPROX.)	FT/LBS	PRESS LOAD (APPROX.)
U-300SD	5.0 CC	0.15 CC	50 - 70	52	
U-410	8.5	0.35	70 - 90	67	
U-480 U-501	9.0	0.4	70 - 90	67	3 TON
U-610 U-610T	13.0	0.55	70 - 90	67	3
U-700 U-700T	18.0	0.9	70 - 90	67	3
U-800 U-800T	20.0	1.0	90 - 110	81	3
U-900 U-900T	25.0	1.25	100 - 120	90	3
U-1000 U-1000T	32.0	1.7	110 - 130	95	4
U-1301 U-1301T	38.0	2.0	120 - 140	105	4

N.B.

- (1) WHEN REASSEMBLING PULSE UNIT, MAKE THE ABOVE SAID PROCEDURE (TO REMOVE ADEQUATE VOLUME OF LINER OIL OUT OF FULL VOLUME) WITHOUT FAIL.
- (2) LOOSEN TORQUE ADJUSTER (RELIEF VALVE SPINDLE) UNTIL IT STOPS, PRIOR TO FILLING PULSE UNIT WITH LINER OIL (DEXRON).
- (3) WHEN DISASSEMBLING LINER CASING SETTER, HIGHER PRESSURE LOAD (ONE/TWO TONS MORE) MAY BE REQUIRED SO AS TO BREAK LOCKTITE.

ASSEMBLY CHART FOR PULSE UNITS

MODEL	FULL VOLUME OF LINER OIL IN PULSE UNIT (APPROX.)	VOLUME TO BE REMOVED FROM FULL VOLUME (APPROX.)	RECOMMENDED TORQUE TO TIGHTEN LINER CASING SETTER (APPROX.)	FT. LBS.	LOAD TO PRESS REAR LINER PLATE (APPROX.)
U-310SD	5.0 cc	0.15 cc	50 ± 5 N.M.	37	
U-350	5.0	0.15	50 ± 5	37	
U-410	8.5	0.35	70 ± 5	52	
UX-450	5.0	0.35 cc	70 ± 5	52	1 T/20 ft.lbs.
UX-500	5.0	0.35	70 ± 5	52	1 /20
ALPHA-50	5.0	0.40	70 ± 5	52	1 /20
UX-612	6.2	0.6	85 ± 5	63	1 /20
UX-622	6.2	0.6	85 ± 5	63	1 /20
ALPHA-60	6.2	0.55	85 ± 5	63	1 /20
UX-700	8.8	0.8	110 ± 5	81	2 /40
UX-T700	8.8	0.7	110 ± 5	81	2 /40
UX-T700L	8.8	0.7	110 ± 5	81	2 /40
ALPHA-70	8.8	0.9	110 ± 5	81	2 /40
UX-800	12.0	0.8	135 ± 5	100	2 /40
UX-T800	12.0	0.8	135 ± 5	100	2 /40
ALPHA-80	12.0	1.10	135 ± 5	100	2 /40
UX-900	14.0	0.95	150 ± 5	110	3 /60
UX-T900	14.0	0.95	150 ± 5	110	3 /60
ALPHA-90	14.0	1.10	150 ± 5	110	3 /60
UX-1000	19.0	1.5	185 ± 10	137	3 /60
UX-T1000	19.0	1.4	185 ± 10	137	3 /60
ALPHA-100	19.0	1.7	185 ± 10	137	3 /60
UX-1300	24.0	1.8	180 ± 10	133	3 /60
UX-T1300	24.0	1.8	180 ± 10	133	3 /60
UX-1400	31.5	2.0	200 ± 10	148	3.5/70
UX-T1400	31.5	2.0	200 ± 10	148	3.5/70
UX-1620	33.5	2.2	200 ± 10	148	4 /80
UX-T1620	33.5	2.1	200 ± 10	148	4 /80
UXR-1820	48.0	3.5	260 ± 10	192	4 /80
UXR-T1820	48.0	3.5	260 ± 10	192	4 /80
UXR-2000	84.0	7.0	280 ± 10	207	4 /80
UXR-T2000	84.0	6.0	280 ± 10	207	4 /80
UXR-2400S	105.0	11.0	650 ± 10	480	5 /90
UXR-3000S	185.0	14.0	700 ± 10	517	5 /90

