

Model MC-19 Impact Press
Operation & Maintenance Instructions



Revised 9/19/07

WARNINGS

1. Safety glasses must always be worn by the machine operator, as well as any co-workers, or any other persons in the area.
2. Never operate this press unless hands and foreign objects are clear of the pinch point area.
3. Never operate a machine in a pneumatic mode without approved dual hand controls that include anti-tie down features. Pneumatic operation requires the use of a filter-regulator-lubricator in the line. Flow controls must be used in the "U" series units.
4. Never remove any safety guards until the air is turned off and secured in the off position.
5. Never do any maintenance work on the press until the air is turned off and locked out with the air lines removed from the cylinder ports.
6. Never make any tooling or set up change until the air is turned off and locked out.
7. Never operate the press until the impact adjustment and the trip travel adjustment is correct. See operation manual for instructions.
8. Never operate the press with tooling (shank) of improper diameter. See machine specifications for proper shank size.
9. Never use hammer blows on any wrench to tighten any nuts on the machine. Hand tightening with a wrench is sufficient.
10. All moving parts must be regularly lubricated with a light grade machine oil. Periodic preventive maintenance scheduling should be established for cleaning, lubricating and inspection of all moving parts.

WARRANTY

All warranties of the products described herein, express or implied, including the warranties of merchantability and fitness for particular purpose are, except if contrary to state law, specifically excluded except the following: We will repair or replace any machine or machine part, which, within ninety (90) days after sale by us or our distributor is found to be defective in material or workmanship.

This is our sole warranty and it shall extend to new equipment, repaired or replaced.

Except if contrary to state law, we shall not be liable for any injury or consequential, arising out of the use of, or the inability to use, the products described herein.

**TO VALIDATE YOUR WARRANTY
PLEASE RETURN THIS PAGE IMMEDIATELY TO:**

Fax: 1-508-754-3063

Or

**Warranty Registration Department
33 Arctic Street
Worcester, MA 01613**

Important Notice:

No person shall operate this equipment without first carefully studying and understanding the instruction manual. Contact us with any questions relating to the safe operation or limitations of this equipment.

The warranty, as presented in the manual, will become effective immediately upon return of this Disclaimer.

Model No. _____

Serial No. _____

Company _____

Address _____

Signed _____

Title _____

Phone _____

E-mail _____

Date _____

Model MC-19 Impact Press

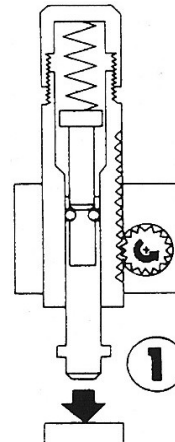
Operation & Maintenance Instructions

Principle of Operation

The press contains a large spring that is compressed during energy section travel. When release point is reached, the compressed energy is released causing the internal hammer to deliver the powerful impact.

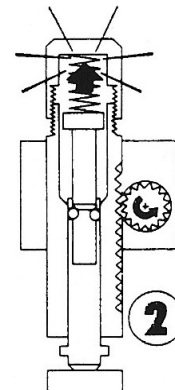
Step 1

Energy section advances toward workpiece by gear rack and pinion, powered by double-acting pneumatic cylinder (pneumatic units) or by operator pulling lever (manual units).



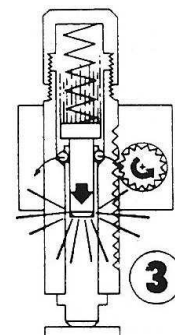
Step 2

After workpiece is contacted, stroke continues. The workpiece is held in place by the pressure from the energy section. The Impact Spring is compression builds as the press continues to maintain contact with the workpiece.



Step 3

When ball bearings reach release point, the powerful impact is released. The Impact Spring delivers force to the hammer, which in turn strikes the plunger (tool holder).



The result is a strong impact from a small press.

Delivery:

Units are shipped in heavy-duty containers to prevent damage in shipment. Should any damage be found, claims should be made immediately against the freight carrier.

Installation:

1. The machines should be cleaned and all anti-rust lubrication should be removed, with special care given to removing this film from the COLUMN (Part #37).
2. All machines are designed with bolt-down holes in the TABLE CASTING (Part #42). The machine should be bolted securely to a rigid bench that is level and located in a safe location.

Impact Adjustment:

1. The press is rated at the maximum force possible.
2. Machines are shipped with three (2) different gauge IMPACT SPRINGS (Part #10).
3. Force can be adjusted by adjusting the IMPACT ADJUST CAP (Part #12)
4. Force can be adjusted by selecting a heavier or lighter gauge IMPACT SPRING (Part #10)
5. When the proper impact force is determined, the IMPACT ADJUST LOCK NUT (Part #15) should be tightened to prevent changes due to vibration or tampering.

NOTE

IMPACT FORCE IS **NOT** ADJUSTED BY CHANGING THE AIR PRESSURE TO THE MACHINE CYLINDER

Tooling Installation:

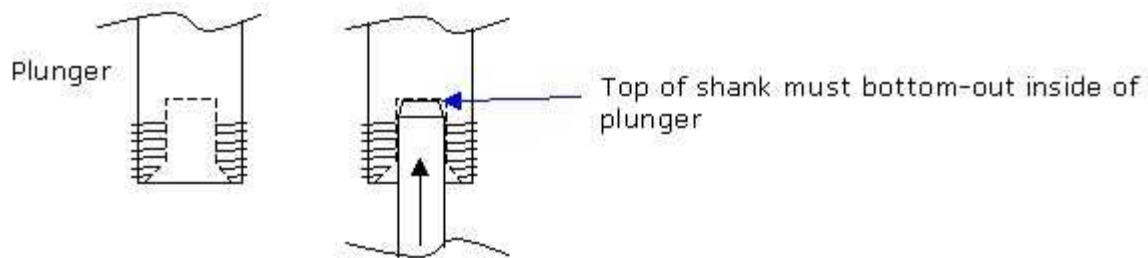
CAUTION

ALL AIR SUPPLY TO THE MACHINE MUST BE SECURED IN THE OFF POSITION PRIOR TO TOOLING INSTALLATION.

1. This press uses a collet arrangement for retaining the tooling in the machine. For proper retention in the collet, the shank size is critical. The following shank size must be used:
6.0mm dia. X 27mm
2. The COLLET NUT (Part #23) must be loosened and the tool shank inserted through the COLLET (Part #22) until it is bottomed into the PLUNGER (Part #19).
3. Tighten the COLLET NUT (Part #23) securely to prevent tool rotation.

NOTE

DO NOT USE HAMMER BLOWS AGAINST THE WRENCH TO TIGHTEN.



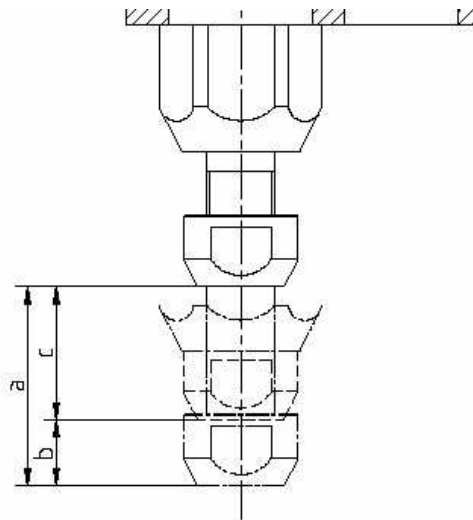
Collet, Collet Nut, Trip Travel Adjust Nut, Trip Travel Lock Nut And Trip Travel Lock Washer are not shown for clarity

**Standard plunger and shank shown. Some systems are specially modified per application.

Operating Height Adjustment:

1. With work piece in place on the machine table, or nested in a suitable fixture, lower the tooling toward the work piece by loosening the CLAMP BOLTS (Part #44) on the upper casting.
2. Secure CLAMP BOLTS (Part #44) before operating the machine.

a	Maximum Total Travel	35.0mm
b	Compression required to realize impact	11.5mm
c	Maximum distance between tool and work piece in rest position (Optimal distance is 6mm or less)	23.5mm



NOTE

THE DISTANCE FROM THE TOOLING TO THE WORKPIECE, WITH MACHINE AT REST, SHOULD BE KEPT TO A MINIMUM (1/4" OR LESS).

Pneumatic Operation:

CAUTION

PRIOR TO ANY HOOK-UP TO PNEUMATIC VALVING, THE MANUAL OPERATING LEVER (Part #35) MUST BE REMOVED.

CAUTION

DO NOT USE FOOT PEDAL CONTROLS

1. Although the press can be operated in a manual mode, it is equipped with a double acting pneumatic cylinder that will require a four-way valve for pneumatic operation.
2. For safe press operation, only DUAL HAND CONTROLS with ANTI-TIEDOWN features should be used and a FILTER-REGULATOR-LUBRICATOR should be used in every installation.
3. With the MANUAL-OPERATING LEVER (Part #35) removed, connect compressed air to the cylinder and turn the airline regulator to a low setting. Operate the pneumatic press controls to signal the press to travel down against the work piece. With the regulator set at a low-pressure setting, the press should not impact.
4. Increase the air pressure at the regulator until the machine impacts against the work piece. **The line pressure to the machine should not exceed the pressure required to trigger the impact.**
5. Changes to the impact setting will require the line pressure to be adjusted, and visa-versa.

Maintenance:

CAUTION

ALL AIR SUPPLY MUST BE SECURED IN THE OFF POSITION PRIOR TO MAINTENANCE OR TOOLING CHANGE.

1. Depending on the usage and operating conditions, the machine should be regularly lubricated at all wear points. Periodically, the machine should be disassembled for cleaning, inspected for worn parts and lubricated completely.

Use a lightweight machine oil like 3-In-One™ to lubricate machine thorough the oil fittings (Part #69). Apply general-purpose lithium grease to the Piston Rod (Part #45) and the Lower Tube (Part #2).
2. Care must be given to the pneumatic lubricator oil level to assure proper lubrication of the pneumatic cylinder.

Parts ordering - Information required:

1. Please furnish part number and part name.
2. Please furnish machine model number.
3. Please furnish serial number.
4. Please furnish quantity desired.

For all information and/or correspondence concerning this machine, please state type and serial number.

Serial Number: _____

Date: _____

Signature: _____

Spare Parts List Model MC-19

Mark	Part #	Description 1	Qty. Req'd
0	20-161001	Shank for MC11/19/19U	1
1	20-111001	Main Casting	1
2	20-101102	Lower Tube	1
3	20-101103	Sleeve Return Spring	1
4	20-101104	Bearing Sleeve	1
5	20-101105	Tube Guide	1
6	20-101106	Ball Bearings	3
7	20-101107	Tube Guide Return Spring	1
8	20-101108	Upper Tube	1
9	20-101109	Hammer	1
10.23	20-101110	Impact Spring-2.3mm Wire Diameter (0.090")	1
10.25	20-101110-2.5	Impact Spring-2.5mm Wire Diameter (0.098")	1
12	20-111112	Impact Adjust Nut	1
19	20-101119	Plunger for MC11/19/19U	1
20	20-101120	Plunger Key	1
21	20-101121	Plunger Retaining Nut	1
22	20-101122	Collet for MC11/19/19U	1
23	20-101123	Collet Nut for MC11/19/19U	1
24	20-111024	Lower Tube Key	1
25	20-101025	Lower Tube Key Nut	1
26	20-111028	Pinion	1
27	20-111027	Pinion Shaft Bushing	1
28	20-101028	Pinion Shaft Bush Screw	3
29	20-111029	Lever Housing	1
30	20-101030	Pinion Drive Pin	1
31	20-101031	Lever Housing Retaining Screw	1
32	20-101032	Lever Return Spring	1
33	20-101033	Pinion Shaft Bearing	1
35	20-111035	Lever Handle	1
36	20-101036	Lever Handle Ball	1
37	20-111037	Column	1
40	20-111040	Pinion Shaft Bearing	1
42	20-111042	Table	1
43	20-102043	Collar	1
45	20-111045	Piston Rod	1
53	20-111053	Lower Cylinder End	1
54	20-111054	Cylinder Seal	2
55	20-111055	Cylinder	1
56	20-111256	Piston	1
59	20-111059	Cylinder Tie Bolts	4
60	20-111060	Top Cylinder End	1
61	20-111061	Piston Rod Seal	1
63	20-101163	Impact Adjust Lock Nut	1
65	20-101165	Shock Absorber	1
66	20-111066	Safety Plunger Bolt Spring	1
67	20-111067	Safety Plunger Bolt	1
68	20-111168	Allen Screw	1
69	20-101069	Oil Fitting	1
70	20-111070	Safety Plunger	1
157	20-111157	Piston Rod Bolt Washer	1
168	20-111068	Lock Nut	1

MC-19

