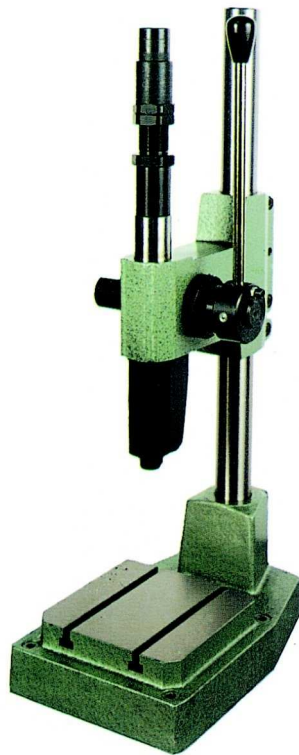


Model MC-18D Impact Press
Operation & Maintenance Instructions



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-18D Impact Press

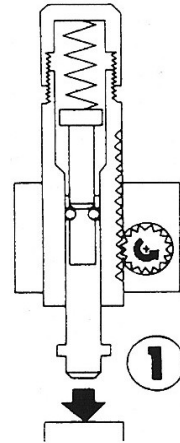
Operation & Maintenance Instructions

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.

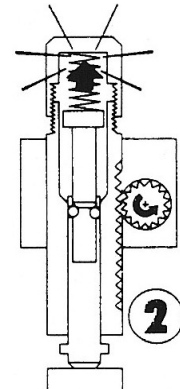
Step 1

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).



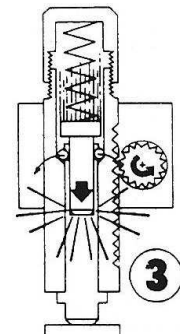
Step 2

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 (3) 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 THROAT OPENING (THE DISTANCE TO THE WORKPIECE)

Tooling Installation:

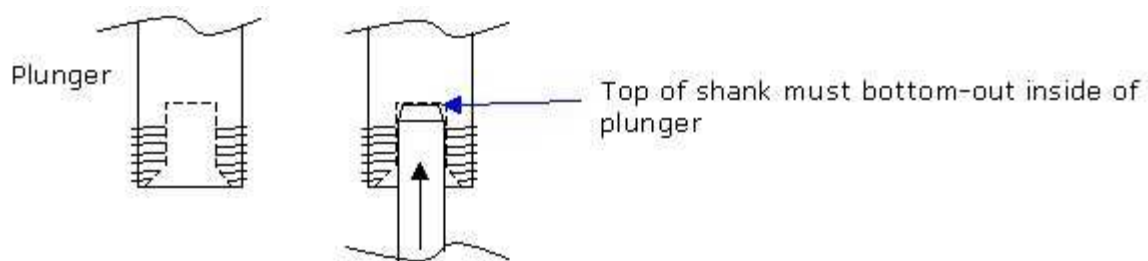
CAUTION

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

1. This machine 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:
10.0mm dia. X 38mm
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.



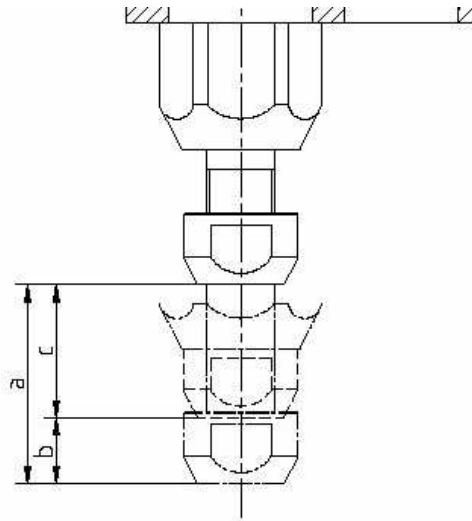
Collet, Collet Nut, Trip Travel Adjust Nut, Trip Travel Lock Nut And Trip Travel Lock Washer are not shown for clarity

**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	56.0mm
b	Compression required to realize impact	16.0mm
c	Maximum distance between tool and work piece in rest position (Optimal distance is 6mm or less)	40.0mm



NOTE

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

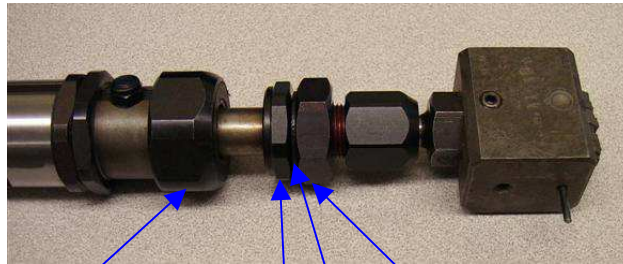
Lever Return Adjustment:

1. The lever tension can be adjusted by loosening the two (2) ALLEN SCREWS (Part #41) located in the sides of the LEVER RETURN SPRING HOUSING (Part #33). With these screws loose, the LEVER SPRING ADJUST BOLT (Part #40) will be free to adjust to the desired tension.

Trip Travel Adjustment:

(Photos below show optional steel type holder installed)

TRIP TRAVEL ADJUSTMENT is a critical adjustment on this press. Improper adjustment can result in chatter at the point of impact, which will shorten the life of the internal parts, or a machine that will fail to impact.



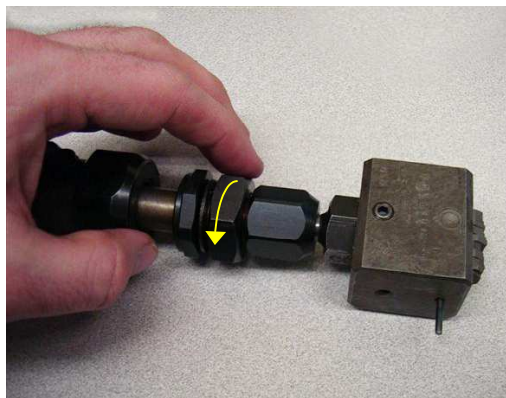
Plunger Retaining Nut (Part #21) with Embedded Shock Absorber (Part #65)

Trip Travel Lock Nut (Part #64)

Trip Travel Lock Washer (Part #164)

Trip Travel Adjust Nut (Part #75)

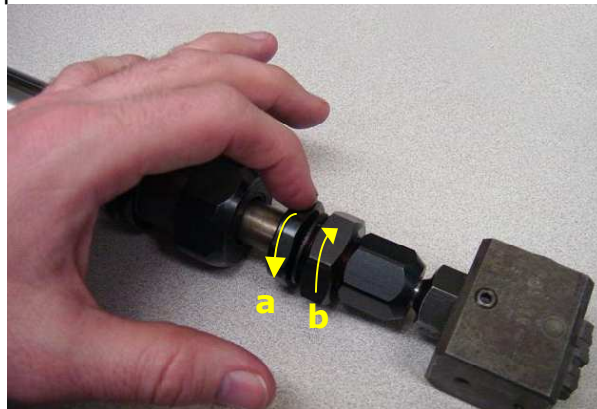
1. Loosen the TRIP TRAVEL LOCK NUT (Part #64) and turn to a location on the threads of the PLUNGER (Part #19) that is out of the way.



2. Use the press in manual mode with the LEVER HANDLE (Part #35) to test and adjust the trip travel setting through trial and error. Gradually adjust the TRIP TRAVEL ADJUST NUT (Part #75) upward on the threads of the PLUNGER (Part #19). Cycle the press using the LEVER HANDLE. Repeat until the press **does not make impact**.



3. a) Turn the TRIP TRAVEL ADJUST NUT (Part #75) back a full turn on the threads to allow impact to occur. b) Lock in place by wrenching the TRIP TRAVEL LOCK NUT (Part #64) against the TRIP TRAVEL ADJUST NUT (Part #75). This adjustment should be checked periodically during operation.



Optional Pneumatic Add-On Air Installation & Maintenance:

WARNING:

BEFORE INSTALLING THE ADD-ON AIR CYLINDER TO THE PRESS, REMOVE THE MANUAL OPERATING LEVER (PART #35) FROM THE MACHINE.

1. The standard pneumatic cylinder available is a single acting cylinder, usually requiring a three-way pneumatic valve. For safe press operation, only DUAL HAND CONTROLS with ANTI-TIEDOWN features should be used and a Filter-Regulator-Lubricator should always be used in every installation.

CAUTION:

DO NOT USE A FOOT VALVE.

2. Install the standard AIR CYLINDER and MOUNTING BRACKET on the press COLUMN (Part #37). The AIR CYLINDER should be positioned on the COLUMN (Part #37) with the CYLINDER PISTON ROD centered and touching against the IMPACT ADJUST CAP (Part #12).
3. Tighten the CYLINDER MOUNTING BRACKET securely to the COLUMN (Part #37) before operating the air.
4. With the MANUAL-OPERATING HANDLE (Part #35) removed, connect airline 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.
5. Increase the line 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.
6. Any change made in the impact setting will require the line pressure to be adjusted.

Optional Pneumatic Add-On Air Maintenance:

Periodically check 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-18D

Mark	Part #	Description 1	Qty. Req'd
0	20-161002	Shank for MC18/21/21U	1
1	20-102001	Main Casting	1
2	20-102102	Lower Tube	1
3	20-102103	Sleeve Return Spring	1
4	20-102104	Bearing Sleeve	1
5	20-102105	Tube Guide	1
6	20-102106	Ball Bearings	6
7	20-102107	Tube Guide Return Spring	1
8	20-102108	Upper Tube	1
9	20-102109	Hammer	1
10.25	20-102110-XL	Impact Spring-2.5mm Wire Diameter (0.098")	1
10.29	20-102110-L	Impact Spring-2.9mm Wire Diameter (0.114")	1
10.35	20-102110-M	Impact Spring-3.5mm Wire Diameter (0.138")	1
10.38	20-102110-H	Impact Spring-3.8mm Wire Diameter (0.150")	1
12	20-102112	Security Cap	1
18	20-102118	Lower Tube Nut	1
19	20-102119	Plunger for MC18/21/21U	1
20	20-102120	Plunger Key	1
21	20-102121	Plunger Retaining Nut	1
22	20-102122	Collet for MC18/21/21U	1
23	20-102123	Collet Nut for MC18/21/21U	1
24	20-102024	Lower Tube Key	1
25	20-103025	Lower Tube Key Nut (MC18/21 same as MC30/35)	1
26	20-102026	Pinion	1
27	20-102027	Pinion Shaft Bushing	1
28	20-102028	Pinion Shaft Bush Screw	Need
29	20-102029	Lever Housing	1
30	20-102030	Pinion Drive Pin	1
31	20-102031	Retaining Screw	1
32	20-102032	Lever Return Spring	1
33	20-102033	Pinion Shaft Bearing	1
35	20-102035	Lever Handle	1
36	20-102036	Lever Handle Ball	1
37	20-102037	Column	1
38	20-102038	Ball Bearing	1
39	20-102039	Spring	1
40	20-102040	Lever Return Spring Adj Bolt	1

41	20-102041	Pinion Shaft Bearing Bolt	2
42	20-102042	Table	1
43	20-102043	Collar	1
44	20-102044	Clamp Bolt	4
63	20-102163	Impact Adjust Lock Nut	1
64	20-102164	Trip Travel Lock Nut	1
65	20-102165	Shock Absorber	1
68	20-102068	Lever Set Screw	3
69	20-102069	Oil Fitting	2
75	20-102175	Trip Travel Adjust Nut	1
76	20-102076	Pin	1
78	20-102078	Washer	1
81	20-102081	Table Set Screw	1
88	20-102088	Main Casting Bolt	1
120	20-102220	Plunger Key Nut	1
126	20-102080	Pinion Shaft	1
164	20-102264	Trip Travel Lock Washer	1
168	20-102086	Lock Nut	1

