

Model MC-35 Impact Press
Operation & Maintenance Instructions



Revised 12/05/2007

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-35 Impact Press

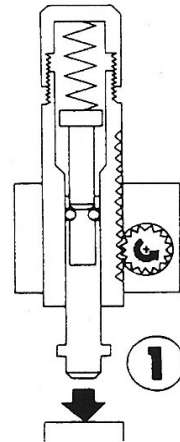
Operation & Maintenance Instructions

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.

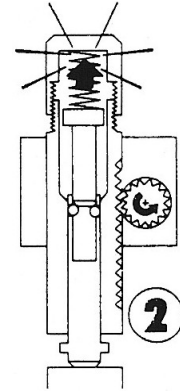
Step 1

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).



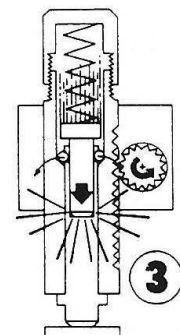
Step 2

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).



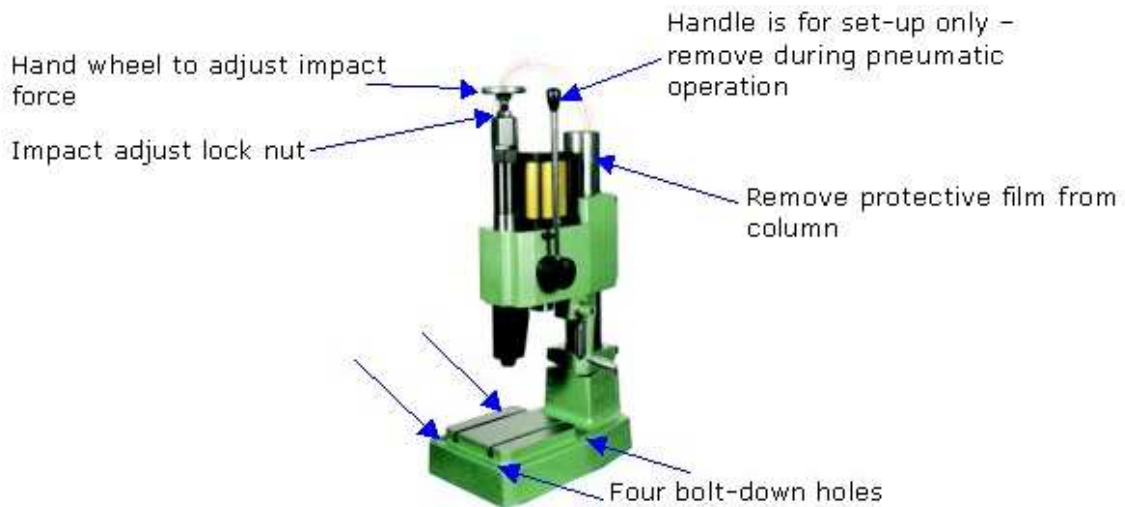
The result is a strong impact from a small press.

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 HAND WHEEL (Part #17)
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:

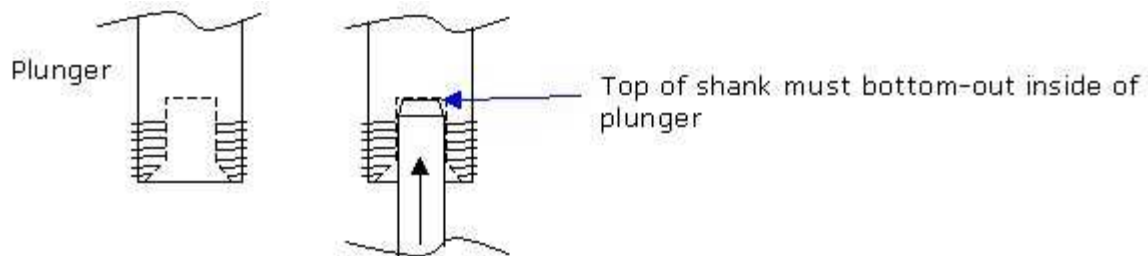
CAUTION

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:
16.0mm dia. X 48mm
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:

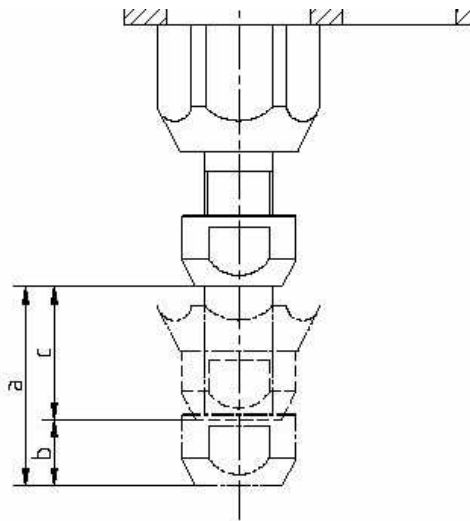
To raise the press:

1. Ensure that the CLAMP BOLTS (Part #44) of the main upper casting are securely tightened. The MAIN CASTING BOLT (the casting spreader Part #88) should be loose.
2. Loosen the CLAMP BOLT (Part #44) of the COLLAR (Part #43).
3. Retract the ELEVATING SCREW (Part #46) by turning the ELEVATING CRANK (Part #85).
4. Raise the COLLAR (Part #43) so that the ELEVATING SCREW (Part #46) is securely positioned in the v-shaped notch on the COLLAR.
5. Securely tighten the COLLAR (Part #43).
6. Loosen the CLAMP BOLTS (Part #44) of the main upper casting.
7. Tighten the MAIN CASTING BOLT (Part #88) to slightly spread the casting slot.
8. Raise the press by turning the ELEVATING CRANK (Part #85).
9. Loosen the MAIN CASTING BOLT (Part #88) to cease spreading the casting.
10. Tighten CLAMP BOLTS (Part #44) before operating the machine.

To lower the press:

1. Ensure that the COLLAR (Part #43) is securely tightened.
2. Ensure that the ELEVATING SCREW (Part #46) is extended downward and rests in the v-shaped notch on the COLLAR (Part #43).
3. Loosen the CLAMP BOLTS (Part #44) of the main upper casting.
4. Tighten the MAIN CASTING BOLT (Part #88) to slightly spread the casting slot.
5. Lower the press by turning the ELEVATING CRANK (Part #85).
6. Loosen the MAIN CASTING BOLT (Part #88) to cease spreading the casting.
7. Tighten CLAMP BOLTS (Part #44) before operating the machine.

a	Maximum Total Travel	64mm
b	Compression required to realize impact	20mm
c	Maximum distance between tool and work piece in rest position (Optimal distance is 6mm or less)	44mm



NOTE

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

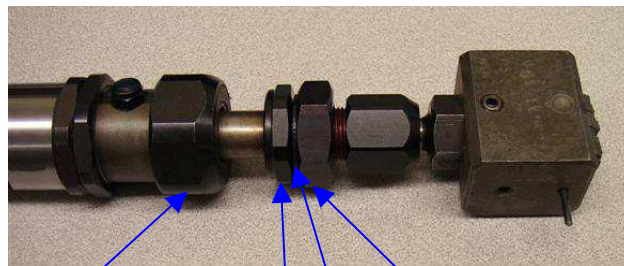
CAUTION

THE TRIP TRAVEL ADJUSTMENT MUST BE MADE IN A MANUAL MODE OF OPERATION WITH AIR SUPPLY DISCONNECTED FROM THE MACHINE. BEFORE THE MACHINE IS MANUALLY IMPACTED, CARE MUST BE GIVEN THAT HANDS AND FINGER ARE CLEAR OF THE MACHINE.

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.



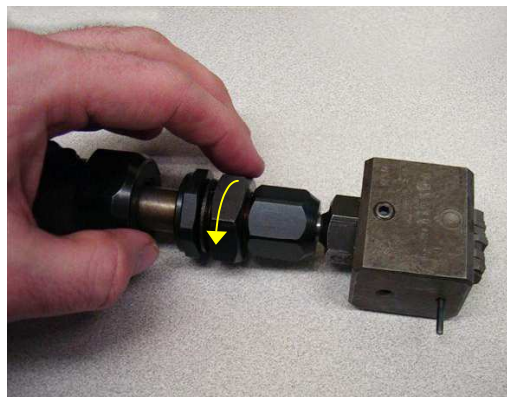
Plunger Retaining Nut (Part #21) with Embedded Shock Absorber (Part #65)

Trip Travel Lock Nut (Part #64)

Trip Travel Lock Washer (Part #164)

Trip Travel Adjust Nut (Part #75)

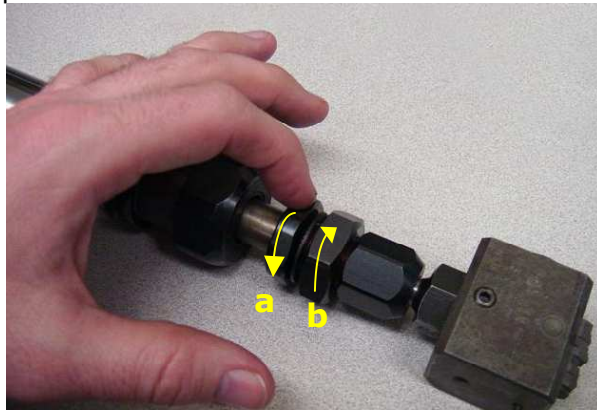
1. Loosen the TRIP TRAVEL LOCK NUT (Part #64) and turn to a location on the threads of the PLUNGER (Part #19) that is out of the way.



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.



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: _____

Model MC-35

Mark	Part #	Description 1	Qty. Req'd	
	0	20-161006	Shank for MC30/35/35U	1
	1	20-113001	Main Casting	1
	2	20-103102	Lower Tube	1
	3	20-103103	Sleeve Return Spring	1
	4	20-103104	Bearing Sleeve	1
	5	20-103105	Tube Guide	1
	6	20-103106	Ball Bearings	6
	7	20-103107	Tube Guide Return Spring	1
	8	20-103108	Upper Tube	1
	9	20-103109	Hammer	1
	10.65	20-103110-M	Impact Spring-6.5mm Wire Diameter	1
	10.7	20-103110-H	Impact Spring-7mm Wire Diameter	1
	10.77	20-103110-XH	Impact Spring-7.7mm Wire Diameter	1
	11	20-103111	Impact Adjust Screw	1
	12	20-103185	Impact Adjust Nut	1
	13	20-103113	Impact Spring Seat	1
	14	20-103114	Impact Spring Seat Bolt	1
	15	20-103115	Impact Screw Lock Nut	1
	17	20-103117	Hand Wheel	1
	18	20-103118	Lower Tube Nut	2
	19	20-103119	Plunger for MC30/35/35U	1
	20	20-103120	Plunger Key	1
	21	20-103121	Plunger Retaining Nut	1
	22	20-103122	Collet MC30/35/35U	1
	23	20-103123	Collet Nut for MC30/35/35U	1
	24	20-113024	Lower Tube Key	1
	25	20-103025	Lower Tube Key Nut	1
	26	20-113026	Pinion	1
	27	20-113027	Pinion Shaft Bushing	1
	29	20-113029	Lever Housing	1
	31	20-103031	Lever Housing	1
	34	20-103034	Pinion Shaft Bearing Bolt	4
	35	20-103035	Lever Handle	1
	36	20-103036	Lever Handle Ball	1
	37	20-113037	Column	1
	40	20-113040	Pinion Shaft Bearing	1
	41	20-103041	Pinion Shaft Bearing Bolt	2
	42	20-113042	Table	1
	43	20-113043	Collar	1
	44	20-103044	Clamp Bolt	4
	45	20-113045	Piston Rod	1
	46	20-113046	Elevating Screw	1
	47	20-113047	Elevating Screw Key Nut	1
	48	20-101024	Rack Key	1
	49	20-113049	Elevating Screw Casting	1
	50	20-113050	Elevating Gear	1
	51	20-113051	Elevating Screw Cast Cover	1
	52	20-113052	Thrust Washer	1
	53	20-113053	Lower Cylinder End	1
	54	20-113054	Cylinder Seal	2

55	20-113055	Cylinder	1
56	20-113256	Piston	1
57	20-113057	Piston Rod Bolt	1
59	20-113059	Cylinder Tie Bolts	4
60	20-113060	Top Cylinder End	1
61	20-113061	Piston Rod Seal	1
62	20-103162	Indicator Pin	1
63	20-103163	Impact Adjust Lock Nut	1
64	20-103164	Trip Travel Lock Nut	1
65	20-103165	Shock Absorber	1
66	20-112066	Safety Plunger Bolt Spring	1
67	20-113067	Safety Plunger Bolt	1
68	20-103068	Lever Set Screw	1
69	20-102069	Oil Fitting	2
70	20-113070	Safety Plunger	1
71	20-113071	Worm Shaft Bearing	1
72	20-113072	Elevating Worm	1
73	20-113073	Guide Pin	2
74	20-103174	Hand Wheel Pin	1
75	20-103175	Trip Travel Adjust Nut	1
79	20-103179	Screw	1
80	20-103180	Trip Travel Adj Lock Washer	1
81	20-103081	Table Set Screw	1
85	20-113085	MC35 Elevating Crank	1
86	20-113086	Elevating Screw Bolt	1
88	20-103088	Main Casting Bolt	1
89	20-113089	SCREW MC35	3
120	20-103025	Plunger Key Nut	1
126	20-113080	Pinion	1
157	20-113157	Piston Rod Bolt Washer	1
164	20-103264	Trip Travel Lock Washer	1
168	20-102086	Lock Nut	1
230	20-113230	Pinion Drive Pin	1

