
Manual Part Number 99903638

IMT Bead Breaker 1000

Revised 20150423



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Revisions

DATE	LOCATION	DESCRIPTION
20060214	51718925	ADDED IMT PART NUMBERS
20060920	51718925	ADDED IMT PART NUMBERS
200091210	51718925	ECN 11141 - UPDATED FITTINGS.
20130418	51718925	Engineering markup; 71412275 qty from 2 to 4.
20130814	79075113	Engineering markup; added second line items for 14 and 15.
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CHAPTER 1

IMT Bead Breaker 1000 Service & Parts

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Introduction

This volume includes information on operating and maintaining your IMT product. It is your responsibility to operate and maintain this unit in a manner that will result in the safest working conditions possible.

Warranty of this unit will be void on any part of the unit subjected to misuse due to overloading, abuse, lack of maintenance and unauthorized modifications. No warranty - verbal, written or implied - other than the official, published IMT new machinery and equipment warranty will be valid with this unit. In addition, it is your responsibility to be aware of existing Federal, State and Local codes and regulations governing the safe use and maintenance of this unit.

Throughout the manual, NOTES, CAUTIONS and WARNINGS are used to draw the attention of personnel. They are defined as follows:

NOTE

A NOTE is used to either convey additional information or to provide further emphasis for a previous point.

CAUTION

A CAUTION is used when there is the very strong possibility of damage to the equipment or premature equipment failure.

WARNING

A WARNING is used when there is the potential for personal injury or death.

Specifications

The IMT 1000 Bead Breaker tool operates using two cylinders - a clamping cylinder and a breaker cylinder at a 90° angle with respect to each other. Both the clamping and bead breaking actions are performed automatically, and no mid-sequence operation by the user is required.

The 1000 Bead Breaker can bead break tires up to 29.5 x 29.

 **CAUTION**

To avoid injury, every user must be trained.

Work with the following organization for training and instruction in safe tire handling:

Tire Industry Association
1532 Pointer Ridge Place, Suite E
Bowie, MA 20716-1883
Telephone: 800-876-8372
Fax: 301-430-7283
www.tireindustry.org

Operation



⚠ WARNING

The optional air/hydraulic pump is capable of generating fluid pressure up to 10,000 PSI. Keep both hands on the handles and away from the clamping jaw or breaker tongue. Make certain that the tool is properly aligned on the rim before allowing the bead breaking action. Do not continue to operate the air/hydraulic pump once the breaker rod is completely extended. Failure to comply with these instructions could result in personal injury or equipment damage.

To operate the bead breaker:

- 1 Make certain the tire is completely deflated. Using rubber lubricant, lubricate the area where you plan to break the bead.



Deflate tire.



Lubricate with rubber lubricant.

- 2 Connect the hose of an air/hydraulic pump to the hydraulic coupling on the bead breaker tool. Connect the air supply line to the air/hydraulic pump. The air supply should be between 5 and 10 CFM at 100 PSI to obtain proper operating characteristics. In addition, the air line should be equipped with an air line filter.
- 3 Position the bead breaker so that the jaw makes solid contact with the rim and the teeth are positioned in the crevice between the bead of the tire and the rim.

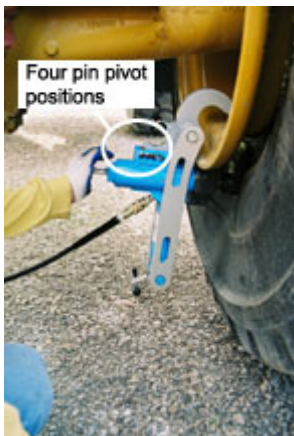


NOTE

When a tire has a trash guard, you may have to drive two straight tire irons between the rim and the tire bead to get a starting point for the teeth.

- 4 Step on the PUMP end of the pump pedal. The clamping rod will begin to extend and the jaw will grip the rim.

The IMT 1000 includes a clamping jaw pivot pin which can be placed in one of four jaw pivot positions. The top hole (closest to the handle) is used for smaller rim flanges, and the bottom hole (furthest from the handle) is used for larger rim flanges.



The IMT Bead Breaker 1000 has four jaw pivot positions.



Bead breaker with pin in highest position.



Bead breaker with pin in lowest position.

⚠ CAUTION

Make certain that the teeth slip in between the rim flange and the bead. If not, depress the RELEASE end of the pump pedal and realign the tool. If the tool is not positioned correctly, extending the breaker rod may damage the tire bead or sidewall, the rim flange, or the tool. If the tool is not pushing parallel to the bead seat area, reposition before continuing.

- 5 Continue pumping until the tongue of the bead breaker pushes the bead free of the rim.
- 6 Repeat the process as needed around the diameter of the rim. The tool can be used on the front and back bead areas.
- 7 Once the bead is free of the rim, depress the RELEASE end of the pump pedal.

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Service

Most bead breaker malfunctions are a direct result of foreign matter, such as dirt, dust, water, etc., entering the tool through the open hydraulic coupler union. Keep the union clean and capped when the pump is not connected to the tool to reduce contamination.

Tools which may be required for bead breaker service include:

- 1 Spanner wrench
- 2 Common screwdriver
- 3 Needle-nosed pliers
- 4 Ice pick or sharp awl
- 5 Allen wrenches (Metric)
- 6 Open end wrenches
- 7 Retaining ring pliers
- 8 Socket wrenches
- 9 Ratchet
- 10 Torque wrench

For information concerning the service of your pump, see the literature which accompanied it. If you are using the IMT Air/Hydraulic Pump, see manual part number 99900120.

Purging Air

These instructions are designed for use with the IMT Air/Hydraulic Pump. If using a different pump, use this information as a guide only. Purge air from the pump and bead breaker as follows:

- 1 Remove the snap rings on the rod connectors (items 35 and 38 on the parts drawing).
- 2 Connect the air/hydraulic pump to the tool.
- 3 Connect the pump to the air supply.
- 4 Position the pump so that it is higher than the tool and depress the PUMP end of the pedal.
- 5 After the clamping and breaker rods are fully extended, depress the RELEASE end of the pedal. Repeat this cycle (PUMP - RELEASE) about five times.
- 6 Extend both rods and keep them extended. Check for leaks. Make certain that the rods do not "creep" back into the cylinders.

Cleaning

Wash the exterior of the bead breaker with warm, soapy water. Rinse with clean water and blow the tool dry with an air nozzle. Also pay particular attention to the cleanliness of the pump.

CAUTION

Avoid seal damage. Do not use solvent to clean the bead breaker.

Storage

Prior to storing the bead breaker:

- 1 Completely retract both rods. An exposed rod may be subject to rusting, pitting and damage from striking other tools.
- 2 If chloride is spilled on the tool, rinse with clean water and blow dry.
- 3 Dress rod surface nicks and dents with fine grit emery paper. Rod surface nicks and dents, if left untended, provide a starting point for rust.

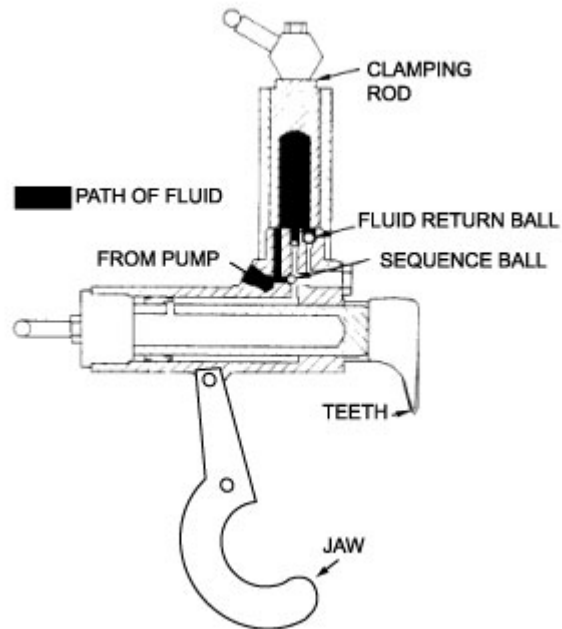
NOTE

The chrome plated rod surfaces provide the seal for the tool. Any steps taken to ensure the continuing quality of the rod surfaces will increase the service life of the tool.

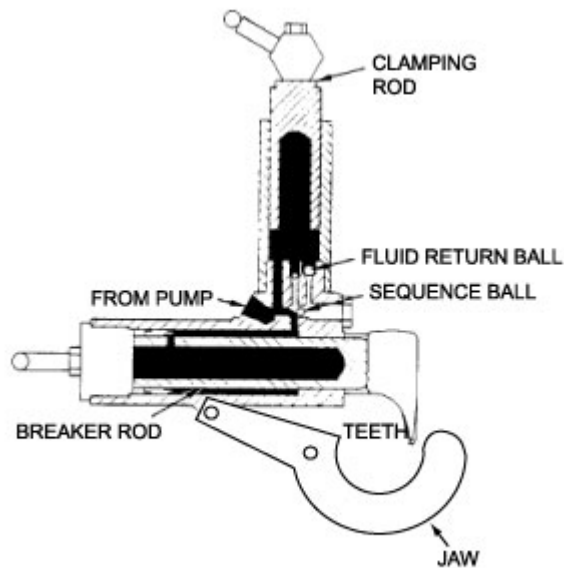
Hydraulic Flow

Use the hydraulic flow information to help troubleshoot problems with the IMT Bead Breaker 1000.

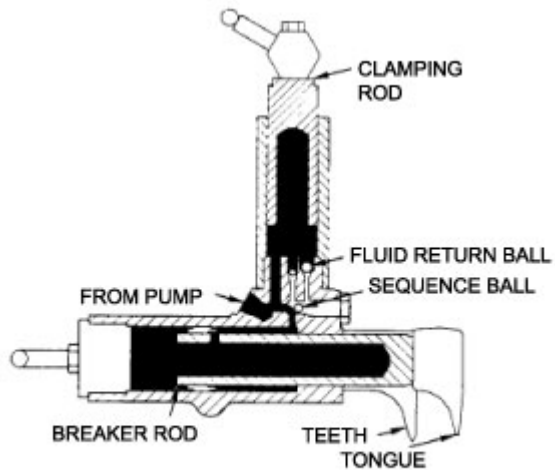
The bead breaker works via an air/hydraulic pump which supplies hydraulic fluid pressure to the clamping cylinder. Fluid pressure is restricted to the clamping cylinder by spring pressure on the sequence ball and by the mated surfaced of the fluid return ball and its seat. As the clamping rod moves out of the cylinder, the jaw clamps firmly on the rim.



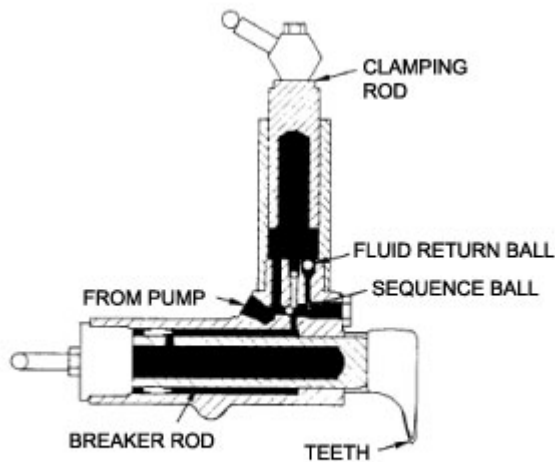
The internal hydraulic pressure of the clamping cylinder is sufficient to overcome the spring pressure against the sequence ball. The ball is forced away from the seat and pressure increases inside the breaker cylinder.



The breaker rod has moved out of the cylinder and the tongue is pressing against the bead. As pressure increases, the tongue will break the bead of the tire from the rim.



Depressing the RELEASE pedal causes a decrease in pressure in the clamping cylinder. With less pressure on the clamping cylinder side of the fluid return ball than on the breaker side, the fluid return ball is lifted off the seat and the breaker rod retracts. Retraction is due to an internal spring and pressure of the bead against the tongue. The breaker rod retracts first, followed by the clamping rod.



NOTE

The clamp can be adjusted for different rim widths. Open the clamp wider for larger rim widths.

Troubleshooting

SYMPTOM	PROBABLE CAUSE	RESOLUTION
Rods extend too slowly.	Insufficient hydraulic pressure from pump.	Check air supply.
		Check clearance of inlet check ball. Ball must be flush with or below end of filter adapter.
Rods fail to retract.	Hydraulic pump does not release.	Dirt under pedal in release valve area. Clean pedal.
	Bearing is misaligned on breaker rod.	Correct or replace.
	Broken or weak springs.	Replace.
Both rods extend at the same time. Hydraulic pressure in breaker cylinder is not being released.	Sequence ball not seated, or spring is broken or weak.	Correct or replace.
	Loose screw and ball not seated.	Correct or replace.
Breaker rod retracts after clamping rod. Hydraulic pressure in breaker cylinder is not being released.	Fluid return ball did not restart.	Correct or replace.
	Dirt plugging return port.	Clean port.
	Weak or broken spring in breaker cylinder.	Replace.
Pump does not reciprocate.	Air piston stuck.	Check cylinder bore of pump for contamination or lack of lubrication.
	Piston poppet not sealing.	Replace.
Pump reciprocates. Ram will not extend.	Check prime.	Depress both air valve and hydraulic release valve at the same time.
Pump extends ram but will not hold system pressure.	Outlet check ball not sealing properly.	Correct or replace.
	Release valve mechanism not sealing properly.	Check pin, ball, release poppet, and poppet retainer. Correct or replace.
Pump extends ram but will not build to maximum pressure. No visible sign of leakage.	Check air supply.	5 - 10 CFM at 100 PSI
	Check for internal leakage.	Release valve mechanism.
		Low relief valve setting.
		Inlet check ball not seating properly. Correct or replace.
Pump extends ram but will not build maximum pressure. Visible sign of leakage through exhaust muffler.	Check piston sub-assembly.	Replace copper gasket and assemble in vertical position.
		Replace piston packing.

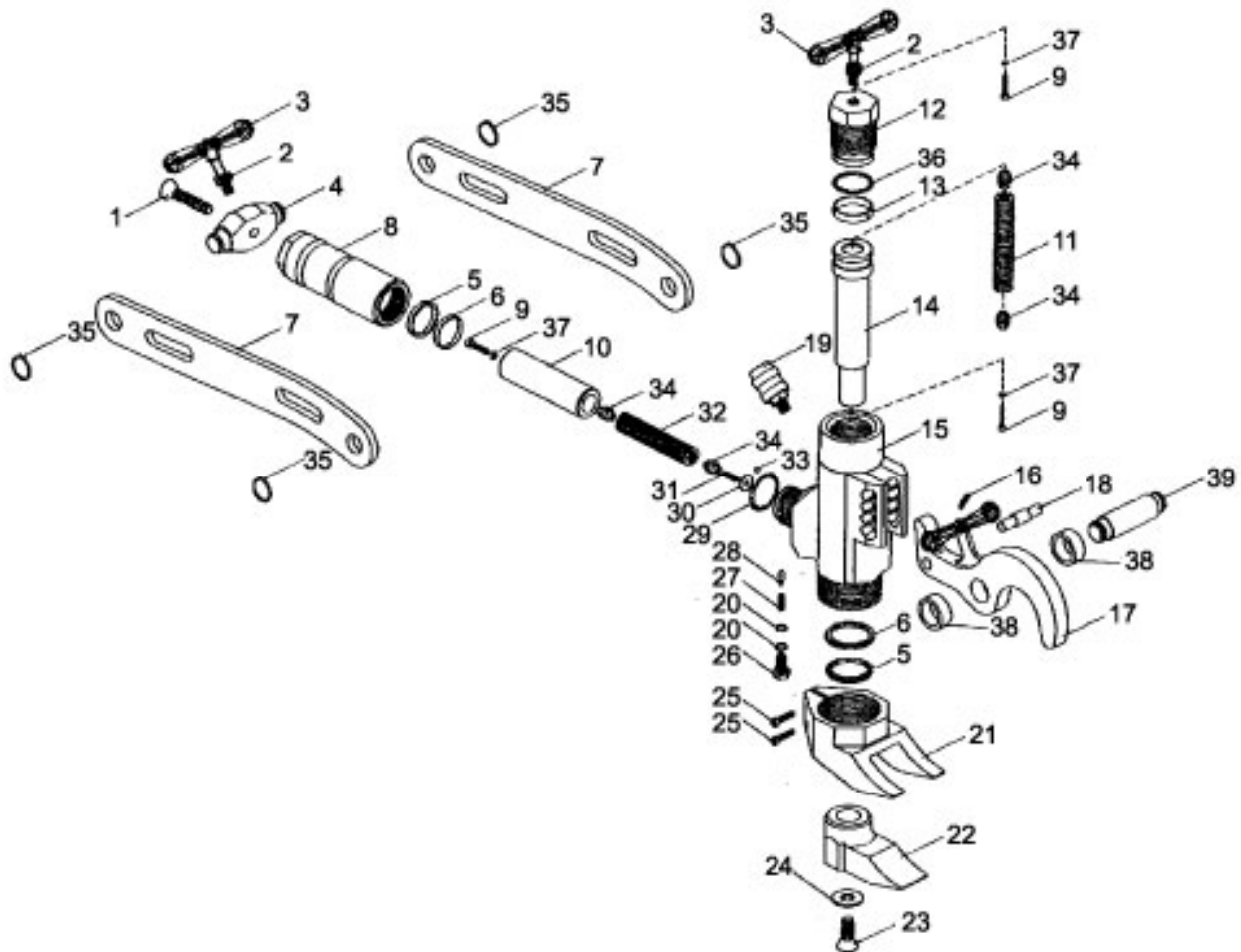
Parts

To order repair parts:

- 1 Give the bead breaker model number.
- 2 Give the part number, description, and quantity required.

Place your order with Iowa Mold Tooling Co., Inc., Box 189, Garner, IA 50438; by telephone at 641-923-3711; by fax at 641-923-2424; or contact your IMT distributor.

Bead Breaker 1000 Assembly (51718925)



BEAD BREAKER (51718925) PARTS LIST							
ITEM	PART #	DESCRIPTION	QTY	ITEM	PART #	DESCRIPTION	QTY
1.	71412321	BOLT	1	25.	71412331	SCREW	1
2.	71412322	NUT	1	26.	71411175	PLUG	1
3.	71411177	HANDLE	1	27.	71411173	SPRING	1
4.	71412323	BASE, CONNECTING ROD	1	28.	71412272	BALL, SEQUENCING	1
5.		RING, SEAL	1	29.	76396884	O-RING	1
6.		RING, SEAL	1	30.	71412332	WASHER	1
7.	71412264	ROD CONNECTOR	1	31.	71412333	SCREW	1
8.	71412324	HOUSING, CLAMP CYL	1	32.	71412273	SPRING	1
9.	71412265	SCREW	1	33.	71412274	BALL	1
10.	71412325	ROD, CLAMP CYL.	1	34.	71412334	NUT	1
11.	71412266	SPRING	1	35.	71412275	SNAP RING	4
12.	71412326	HEAD, BREAKER CYL.	1	36.		SEAL	1
13.		SEALS	2	37.	71412335	NUT	1
14.	71412327* 71415421**	ROD, BREAKER CYL. ROD, BREAKER CYL.	1 1	38.	71412276	SNAP RING	2
15.	71412328* 71415422**	BODY BODY	1 1	39.	71412277	PIN, ROD CONNECTOR	1
16.	71412329	SCREW	1	40.	94396604	SEAL KIT (INCL. 5,6,13,36)	1
17.	71412267	JAW	1	41.	72533424	COUPLER-DISC .38FPT 10,000 PSI (NOT SHOWN IN DRAWING)	1
18.	71412330	PIN, JAW PIVOT	1	42.	70396551	DECAL-BEAD BREAKER 1000 (NOT SHOWN IN DRAWING)	1
19.	71411176	PLUG	1	43.	99903638	MANUAL-BEAD BRKR 1000 (NOT SHOWN IN DRAWING)	1
20.	71411174	WASHER	1	44.	72053723	ADPTR-MPT/HEX/MPT .38 .38 (NOT SHOWN IN DRAWING)	2
21.	71412268* 71415423**	TEETH, CLAMPING TEETH, CLAMPING	1 1	45.	72053546	NIPPLE-DISC 38 FPT (10,000 PSI) (ATTACHES TO #19) (NOT SHOWN IN DRAWING)	1
22.	71412269* 71415424**	TONGUE TONGUE	1 1	REF	79075113	BEAD BREAKER 1000 (INCL. ITEMS 1-40)	1
23.	71412270	SCREW	1	REF	51718925	BEAD BREAKER 1000 ASSEMBLY (INCL. ITEMS 1-45)	1
24.	71412271	WASHER	1				

* Use with breaker assemblies with date code *3013K and earlier
 ** Use with breaker assemblies with date code *3113K and later

NOTE: DATE CODE IS STAMPED ON CYLINDER BARREL