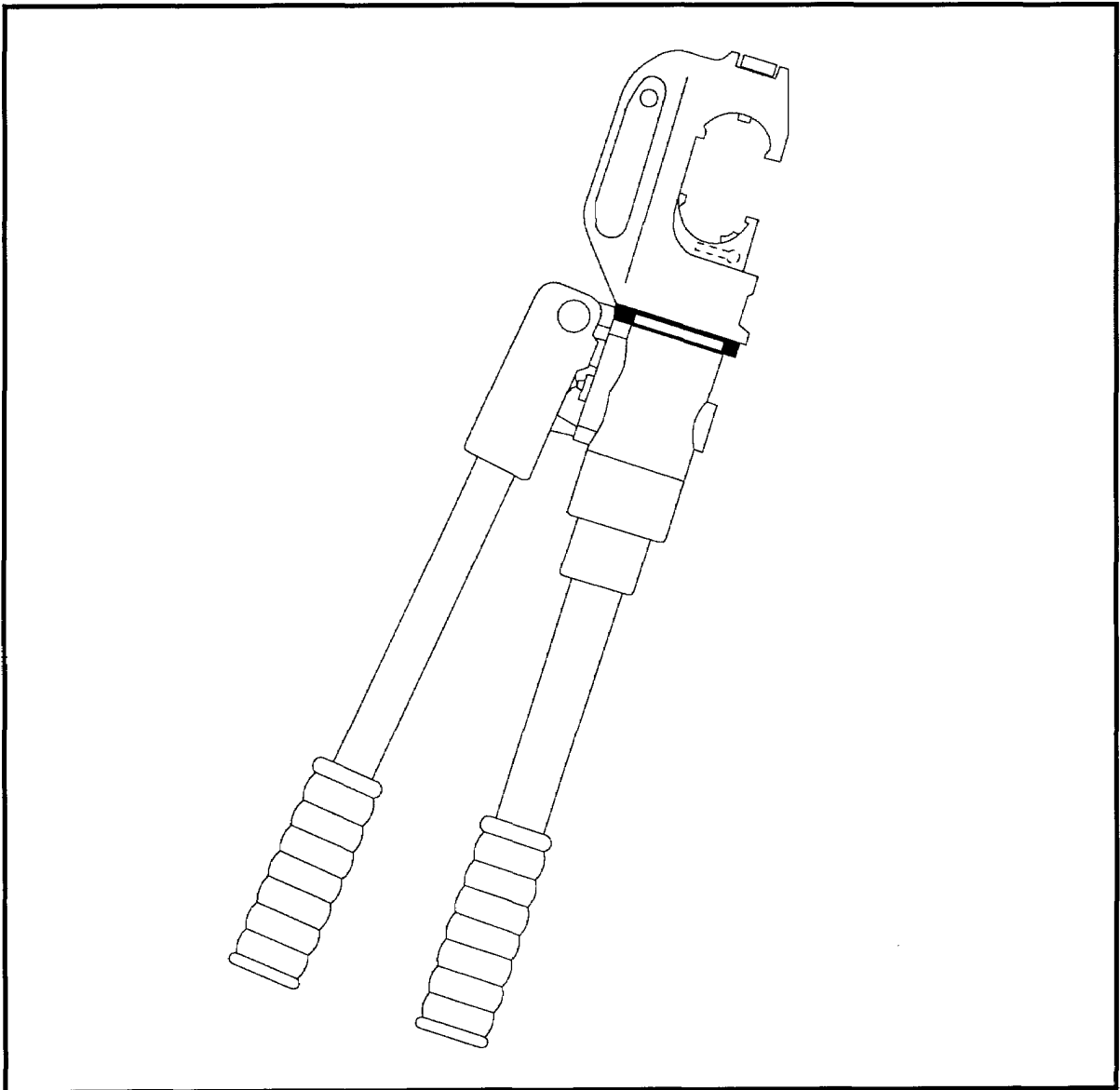


Thomas & Betts

14 TON MANUAL HYDRAULIC TOOL

OPERATING, MAINTENANCE INSTRUCTIONS AND PARTS LIST

CATALOG NO. TBM14M



Thomas & Betts / Electrical Division

CAUTION:

Read and understand all instructions before attempting to operate this tool.

PRECAUCION:

Lea y comprenda todas las instrucciones antes de operar esta herramienta.

ATTENTION:

N'utiliser cet outil qu'après parfaite connaissance de son mode d'emploi.

CONTENTS

	PAGE
General Safety Rules	1
Introduction & Description	2
Features	2
Specifications	2
Dimensions & Nomenclature	3
Operating Instructions	3
Preventive Maintenance	4
Replenishing of Oil	4
Parts List	5
Exploded View	6
Output Check	7

- 5. DO NOT OVER-REACH.** Keep proper footing and balance at all times.
- 6. NEVER ATTEMPT TO HANDLE OR CARRY** tool at the upper portion of the pump body, or by the handle. Keep hands and fingers clear of pumping area and dies.
- 7. NEVER ATTEMPT TO MAKE A CONNECTION TO A "HOT" LINE.** *Never assume the power is OFF!* Determine before hand if any electrical hazard could exist when making a connection to a line or wire.

GENERAL SAFETY RULES

- 1. FAMILIARIZE YOURSELF WITH THE NEW TOOL.** Read the instruction manual. Become aware of its proper usage as well as the potential hazards that could occur.
- 2. KEEP WORK AREA CLEAN AND WELL LIT.** Poor lighting and cluttered areas invite accidents.
- 3. USE SAFETY GLASSES.**
- 4. MAINTAIN TOOL WITH CARE.** Keep tool in good condition at all times. Keep it clean for best and safest performance.

WARNING:

DO NOT ATTEMPT TO MODIFY THE TOOL OR ANY OF ITS COMPONENTS.

DO NOT OPERATE THE TOOL UNLESS IT IS IN ITS ORIGINAL FACTORY CONFIGURATION

DO NOT OPERATE THE TOOL WITH ANY OF ITS COMPONENTS DAMAGED, MISSING OR ASSEMBLED IN ANY MANNER OTHER THAN AS ORIGINALLY RECEIVED.

SUCH MODIFICATION AND/OR OPERATION COULD RESULT IN A HAZARDOUS CONDITION WHICH COULD CAUSE SERIOUS INJURY OR PROPERTY DAMAGE.

INTRODUCTION:

The TBM14M is a high pressure, manually operated hydraulic pumping tool. Properly used and maintained, this pump will give a long, safe and satisfactory service.

DESCRIPTION:

The TBM14M manually operated hydraulic pumping tool is a two stage, high pressure pump of very durable construction. The tool is simple to maintain and with proper care will give long and excellent service.

The pumping mechanism is of a two speed piston design. The Pump provides, in the low pressure stage, high oil volume for rapid die advance under no load. Once resistance is met the pump automatically shift to high internal pressure deliver up to 10,000 p.s.i. The tool is protected by a high pressure relief valve in the pump body assembly. This relief valve is a replaceable, drop-out type cartridge for easy maintenance. The care and adjustment of this valve is covered under "output Check".

FEATURES:

- Time saving two-stage pump for rapid advance.
- Replaceable "drop-out" bypass valving cartridge for easy shop repairs.
- Fiberglass handles
- Greater tonnage output - accept shell dies that are interchangeable with TBM15 tool (Cat. No. 15500 Series Die)
- Larger jaw opening of 1.50" accepts conductors up to 750 MCM for either end or mid-span connections.

SPECIFICATIONS:

This tool is designed to accommodate hexagonal and circular shell type dies for applying compression fittings to copper and aluminum conductors.

Force at die faces

- 12.7 Metric Tons (Max.)
- 14.0 Short Tons (Max.)

Ram Stroke

- 38 mm (1.496 in.)

Reservoir Capacity

- 200 CM³ (12.2 in³)

Weight

- 7 Kgs (15.4 lbs.)

Hydraulic Oil

- Shell Tellus Oil T15 or
 - Aero Shell Fluid 4
-

WARNING:

- Improper use of this pump can cause injury.
- This tool is designed to accommodate shell type dies for applying compression fittings to copper and aluminum conductors. This pump should only be operated at the designed working force of 14 tons.
- The hydraulic fluid used in the TBM14M pump is petroleum based and as such proper care should be exercised in its use. Exercise ordinary care. Avoid continued skin contact. Use normal personal hygiene. Avoid contact with the eyes and mouth. Pumps are shipped ready for use, filled with hydraulic oil.

DIMENSIONS & NOMENCLATURE

(See figure 1)

Note: Numbers in parentheses refer to key numbers shown in the parts breakdown illustration on page 6.

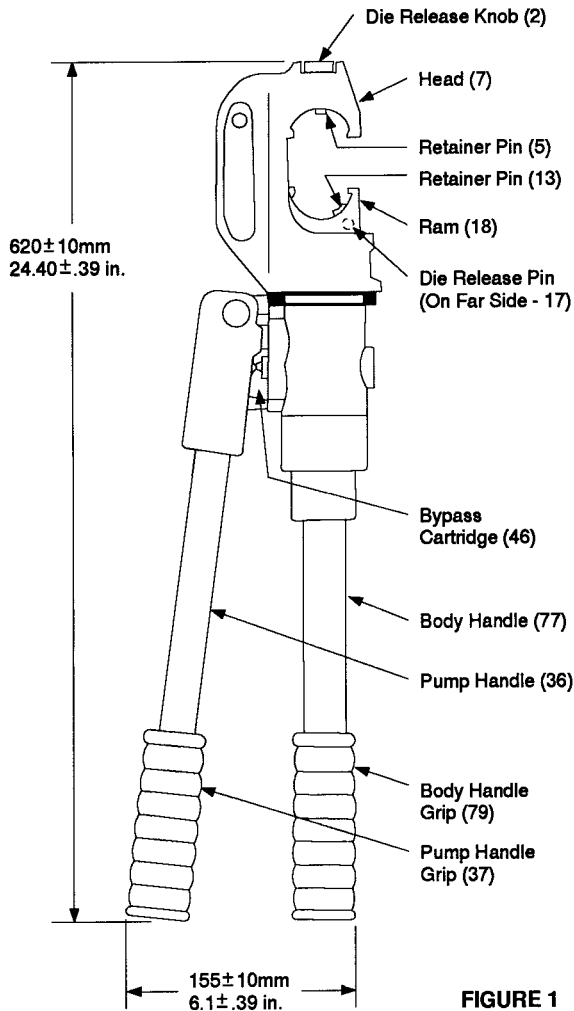


FIGURE 1

OPERATING INSTRUCTIONS

(See figure 1)

1. To insert the dies in head (7), pull die release knob (2) and locate one die of the set in top of head, center it, and release the pin.
2. Insert second die of the set in Ram (18) at bottom of head (7) by pushing die release pin (17). The die will be held in Place by the retainer pin (13).

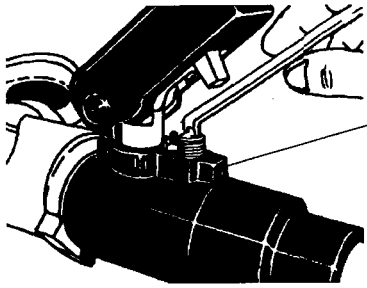
NOTE: The head of tool can be rotated 180 degrees to accommodate operator's need. The head cannot be rotated under hydraulic pressure.

3. Place connector in position on die for first compression.
4. Operate pump handle (36) until dies close or until bypass valve (46) operates. NOTE: This can be detected by a popping sound accompanied by a reduction in force required to close pump handle. If dies are not clearly visible, continue pumping until the bypass valve operates. If dies fail to close, it will be due to:
 - a. tool being used for an application for which it was not designed.
 - b. pressure not building up to 700 kgs/cm^2 ($10,000\text{ psi}$).
 - c. dies being of incorrect size.
5. Release pressure by twisting the pump handle (36) clockwise, holding in open position and bringing to closed position.

WARNING: KEEP FINGERS CLEAR OF DIES AND RAM (18) DURING OPERATION.

TO REPLACE BYPASS CARTRIDGE

1. Loosen the set screw. Use a spanner wrench to remove the old bypass cartridge. CAUTION: Do not remove the socket lead center screw. See figure 2.
2. Place a new bypass cartridge in the pump body hole and screw down with a spanner wrench until the top surface of the screw is flush with the pump body surface. CAUTION: Do not overtighten the cartridge, tighten the set screw. See figure 3.
3. Test head output force with a TBM14MG gauge or equivalent. Always use test dies in the tool when using a force gauge. Output force can be increased or decreased by turning the socket head center screw in the end of the bypass cartridge. See figure 4.



LOOSEN
SET SCREW
FIRST

FIGURE 2

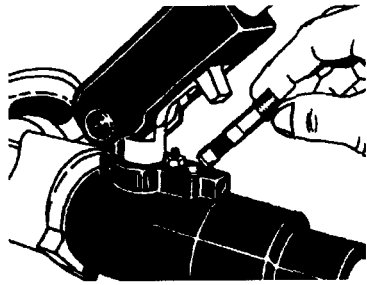


FIGURE 3

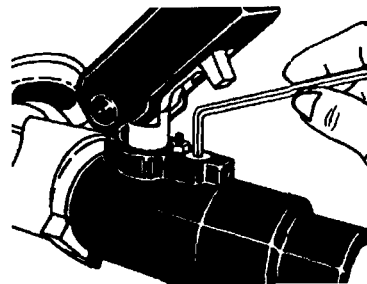


FIGURE 4

PREVENTIVE MAINTENANCE

1. Do not pump tool ram (18) closed when dies are not in the head. This can place excessive pressure on the head and ram resulting in fracture or distortion of the head and ram. If the tool ram (18) is inadvertently closed without dies, do not continue pumping. Retract the ram (18) by twisting the pump handle. (36) clockwise and bringing it into closed position to retract the ram (18).
2. Keep tool clean and free from dirt or metal particles, especially around head, dies and ram.
3. Check oil level periodically and use clean oil as recommended. Never mix different brand or types of oil as deterioration of tool oil seals could result.

REPLENISHING OF OIL

1. Release pressure by twisting pump handle (36) and close it until it depresses the release valve stem (43) see figure 5.
2. Remove body handle assembly (76 to 79) by rotating the body handle (77).
3. Place tool head downward and hold it in upright position.
4. Pump the handle several times and release pressure. Repeat this procedure several times. (This will purge air bubbles trapped in the hydraulic system.)
5. Hold pump handle inclosed position, and remove reservoir cap(75) with care as air bubbles may remain in the end of oil reservoir.
6. Replenish oil (Shell Tellus oil T15, or equal) and reset the cap.
7. Check oil reservoir for pin holes by squeezing reservoir with fingers. If any leaks are detected, replace with a new reservoir.

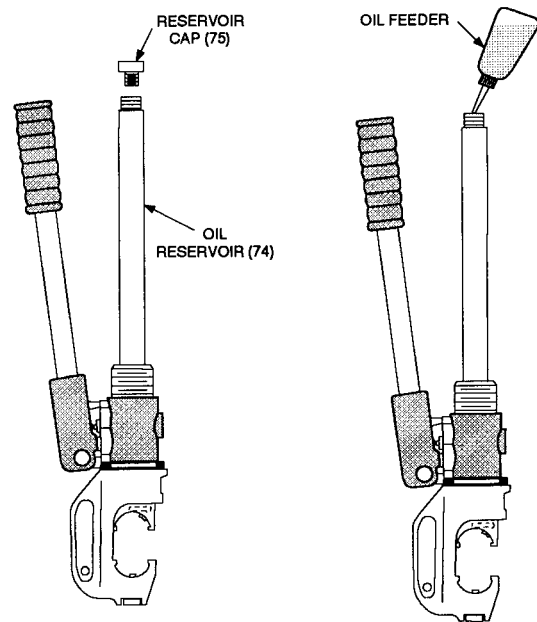
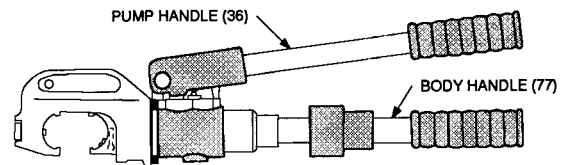
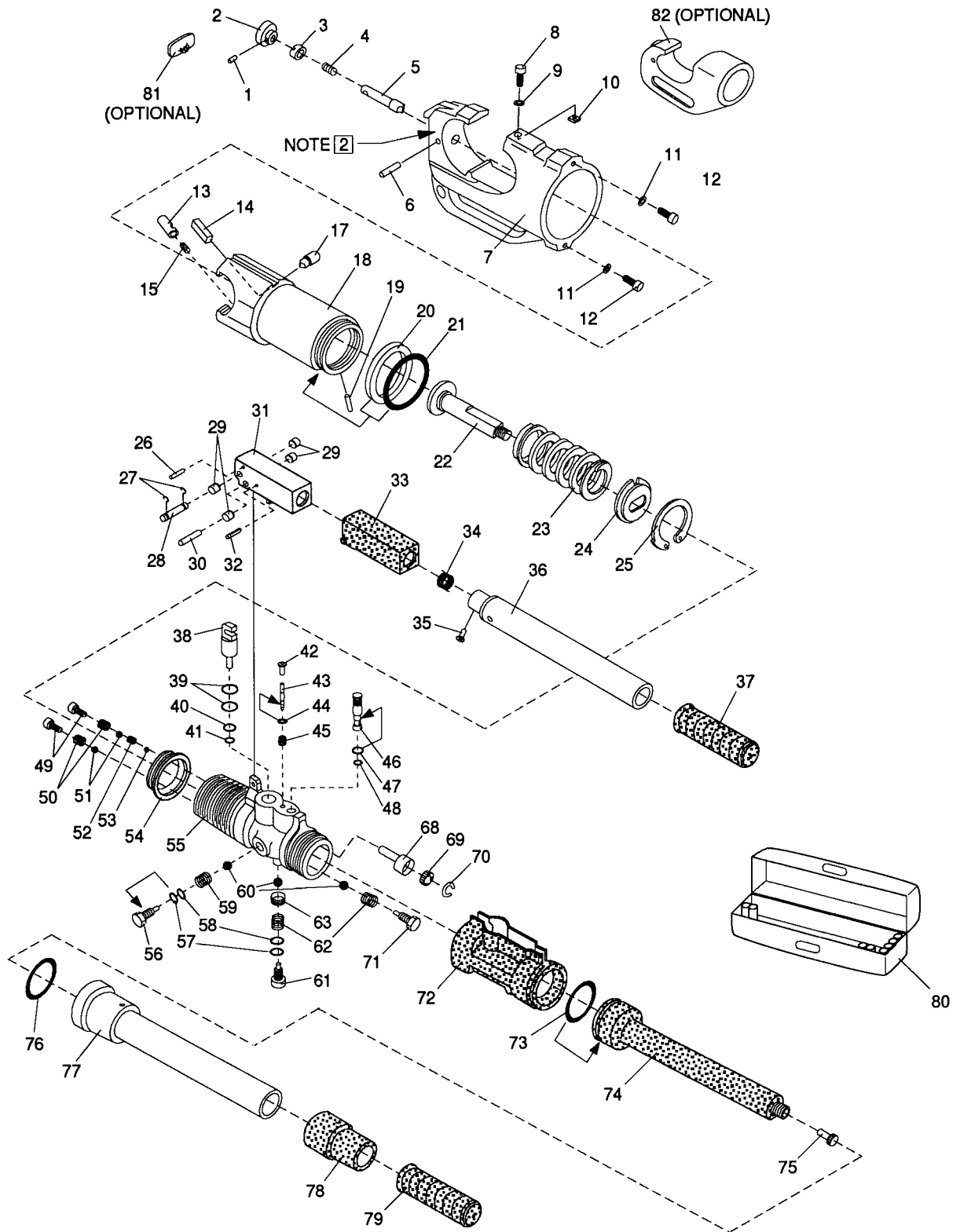


FIGURE 5

ITEM	DESCRIPTION	PART NO.	QTY.	ITEM	DESCRIPTION	PART NO.	QTY.
1	2 x 12 DRIVE PIN	R823301	1	44	P-3 O-RING (C.P.)	R823344	2
2	KNOB	R823302	1	45	SPRING (144)	R823345	1
3	SCREW (16)	R823303	1	46	BYPASS CARTRIDGE	R823346	1
4	SPRING (257)	R823304	1	47	S-9 O-RING	R823347	1
5	RETAINER PIN (A)	R823305	1	48	P-8 O-RING (C.P.)	R823348	1
6	2.5 x 25 DRIVE PIN (BW)	R823306	1	49	VALVE SCREW (10)	R823349	2
7	HEAD	R823307	1	50	SPRING (67)	R823350	2
8	GUIDE SCREW	R823308	1	51	9/32" BALL	R823351	2
9	M5 LOCK WASHER	R823309	1	52	SPRING (66)	R823352	1
10	KEY	R823310	1	53	3/16" BALL	R823353	1
11	M5 LOCK WASHER	R823311	2	54	SER-48 SCRAPER	R823354	1
12	M5 x 6 SCREW	R823312	2	55	BODY	R823355	1
13	RETAINER PIN (B)	R823313	1	56	SUCTION VALVE PLUG	R823356	1
14	2.5 x 14 DRIVE PIN (BW)	R823314	1	57	P-4 BACK-UP RING (B.C.)	R823357	2
15	SPRING (177)	R823315	1	58	P-4 O-RING (C.P.)	R823358	2
17	DIE RELEASE PIN	R823317	1	59	SPRING (4)	R823359	1
18	RAM	R823318	1	60	7/32" BALL	R823360	3
19	2.5 x 8 DOWEL PIN (B)	R823319	1	61	VALVE PLUG (1)	R823361	1
20	P-42 BACK-UP RING (B.C.)	R823320	1	62	SPRING (43)	R823362	2
21	P-42 O-RING	R823321	1	63	SPRING HOLDER	R823363	1
22	SPRING HOLDER	R823322	1	64	5/32" BALL	R823364	1
23	SPRING (311)	R823323	1	65	M5 x 5 SCREW (F.P.)	R823365	1
24	RAM SPRING SUPPORT	R823324	1	66	M5 x 8 SCREW	R823366	1
25	OV-36 SNAP RING	R823325	1	68	STRAINER	R823368	1
26	5 x 28 DRIVE PIN	R823326	1	69	FILTER	R823369	1
27	CE-7 SNAP RING	R823327	2	70	SI-20 RING	R823370	1
28	PIN (85)	R823328	1	71	VALVE SCREW (8)	R823371	1
29	BUSHING	R823329	4	72	BODY INSULATION	R823372	1
30	PIN (84)	R823330	1	73	G-30 O-RING	R823373	1
31	PUMP HANDLE HEAD	R823331	1	74	OIL RESERVOIR	R823374	1
32	4 x 26 DOWEL PIN (G)	R823332	1	75	RESERVOIR CAP	R823375	1
33	HANDLE HEAD INSULATION	R823333	1	76	G-40 O-RING	R823376	1
34	SPRING (146)	R823334	1	77	BODY HANDLE ASSEMBLY	R823377	1
35	PUSH PIN	R823335	1	78	HANDLE EXT. INSULATION	R823378	1
36	PUMP HANDLE (WHITE)	R823336	1	79	BODY HANDLE GRIP	R823379	1
37	PUMP HANDLE GRIP (2)	R823337	1	80	PLASTIC CARRYING CASE	R823380	1
38	PUMP PISTON	R823338	1	81	INSULATOR KNOB	R826802	1
39	P-22 O-RING	R823339	2	82	PROTECTIVE BOOT	R826881	1
40	P-9 BACK-UP RING (B.C.)	R823340	1				
41	PS-9 PENT SEAL	R823341	1				
42	RELEASE VALVE SCREW (7)	R823342	1				
43	RELEASE VALVE STEM	R823343	1				



For parts or service contact the Tool Service Center at 1-800-284-TOOL (8665).

OUTPUT CHECK (See Figure 6)

1. Insert test dies in tool.
2. Turn force test gauge knob clockwise until it stops.
3. Insert ram of gauge between dies and operate pump handle slightly until the tool holds the gauge.
4. After gauge is securely positioned between dies, continue pumping until bypass valve operates.
5. Tool output is normal when the needle stops in light green area of gauge.
6. Tool output can be increased (clockwise) or decreased (counterclockwise) by turning the M8 screw located in bypass cartridge (46). Use a No. 4 metric or 5/32" hex wrench key.
7. Turn the knob counterclockwise.
8. Support gauge by hand, and release tool pressure.

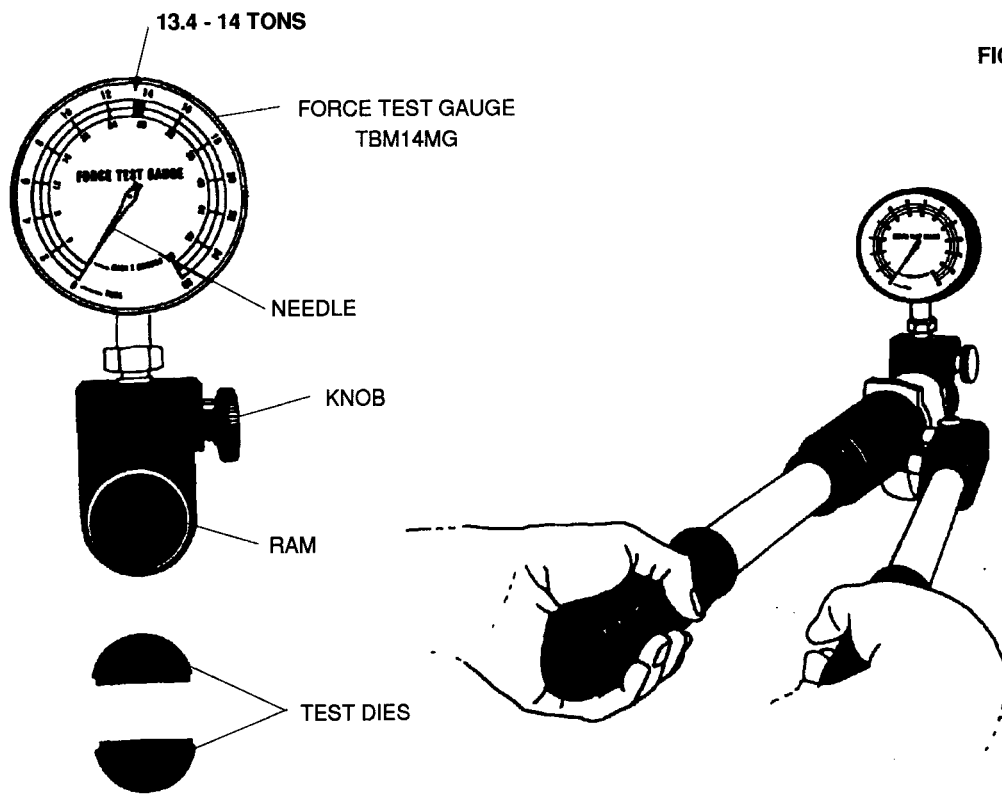


FIGURE 6

WARRANTY: Thomas & Betts sells this product with the understanding that the user will perform all necessary tests to determine the suitability of the product for his intended use. Thomas & Betts manufactures its goods and tools in a manner to be free of defects. Should any defect occur in its goods (within two years) or tools (within ninety days), Thomas & Betts, upon prompt notification, will at its option, exchange or repair the goods or tools or refund the purchase price.

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