

## **TECHNICAL BULLETIN #1** RIVET BUSTER VALVE (ALL MODELS).



If your rivet buster is not performing as its best, the valve assembly #3160 is the first place to look.

If the tool is still working, but not hitting hard, the valve may be sticking. This is caused by dirt/oil or magnetization. You need to demagnetize the valve and/or clean the valve. Ask your local tool supplier for demagnetizing units.

If the tool just fires once, the main valve body (#3156) may have some holes blocked and need to be thoroughly cleaned. Check the smaller holes with a paper clip sized piece of wire.

If the tool is weak, check the dimensions listed in the drawing above, they may need replacing.

For assistance in any sales, technical, maintenance or repair questions, please call APT @ Phone: (800) 532-7402 or (714) 285-2828 • Fax: (800) 715-6502 or (714) 285-2829 1000 S. Grand Ave, Santa Ana, CA 92705 Website: <u>www.apt-tools.com</u> • e-mail: <u>info@apt-tools.com</u> TDS-10 © 2017 AMERICAN PNEUMATIC TOOLS a business unit within: Construction Equipment North America LLC.



### **TECHNICAL BULLETIN #2**

MODEL 140 PAVING BREAKER #17923. O Ring replacement.

IF YOUR M140 IS NOT PERFORMING AT ITS BEST, YOU MAY NEED TO INSPECT THE O RING SEALS IN THE VALVE ASSEMBLY LOCATED IN THE HANDLE.

THE O RINGS SHOULD BE REPLACED EVERY TIME THE VALVE IS DISMANTLED EVEN IF THEY SHOW SIGNS OF WEAR OR TEAR.

THESE O RINGS PROVIDE AN AIR SEAL AND IF LEAKING, IT WILL RESULT IN LOSS OF POWER AND POSSIBLE DAMAGE TO THE VALVE ASSEMBLY.

BEFORE RE-ASSEMBLY, CHECK THE HOLES IN THE HANDLE AS SHOWN IN THE 2 PICTURES. THE HOLES SHOULD BE FREE OF SHARP EDGES. IF POSSIBLE, CHAMFER THE HOLES APPROX 1/32" AROUND THE EDGES.



BE SURE TO USE SOME LUBRICANT ON THE O RINGS WHEN INSTALLING THE VALVE ASSEMBLY OR DAMAGE MAY OCCUR TO THE O RING SEAL. O RING LUBRICANT OR A LIGHT GREASE OR PETROLEUM JELLY WILL WORK.

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## **TECHNICAL BULLETIN #3**

What does 'dry firing' mean?

'Dry firing' is a common term used to describe the operation of a pneumatic tool when either a tool bit is not installed in the tool or insufficient pressure is being applied to the work while being operated. All pneumatic tools are designed to withstand the inevitable 'dry firing' but constant misuse will lead to tool failure.

If a tool bit is not installed, the tool itself absorbs the hitting force, causing damage to the internal parts such as tappets, tappet bushings, pistons etc.

If insufficient pressure is not applied to the tool, particularly in horizontal work, the tool will bounce away from the tool bit and keep firing, causing damage as described above.



- So, to extend the life of the tools remember to -
  - 1. Install the correct tool bit for the tool and job being conducted.
  - 2. Apply constant pressure to the work piece preventing as much recoil as possible.
  - 3. Release the throttle lever when breaking through the work and when you remove the tool from the work.

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### **TECHNICAL BULLETIN #4**

#### PAVING BREAKER NOISE (DECIBEL) LEVELS.

The following data approximations are to be used as a guideline only on tool noise output levels for 30, 40, 60 and 90lb class paving breakers.

dB RATING @90 p.s.i.	dB @ 3ft distance	dB @ 8ft distance	dB @ 16ft distance
PB-30 lb without muffler	100	97	94
PB-30 lb with muffler	94	92	87
PB-40 lb without muffler	102	98	96
PB-40 lb with muffler	94	92	87
PB-60 lb without muffler	103	100	95
PB-60 lb with muffler	95	93	88
PB-90 lb without muffler	106	101	95
PB-90 lb with muffler	98	93	88

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#### Model 133 operation and maintenance.

**SAFETY FIRST.** The safety information made available by APT must be read, understood and implemented by the operator of the tool.

If you have not read this information contact your supervisor, rental yard or APT immediately.

The M133 is designed to run at 90 psi air pressure. A <sup>3</sup>/<sub>4</sub> diameter hose, rated at a minimum burst pressure of 250 psi is recommended. To provide lubrication during use, an in-line oiler should be used.

Before connecting to an air supply and operating at the start of your day, check the following –

That the general condition of the tool is satisfactory, no loose parts and the hose and its connections are in good condition also.

Make sure the trigger has unrestricted movement.

Check for damage on the following items, and replace if necessary:

# 4374 Sleeve,
# 3171 Retainer
# 3170 Bumper,
# 5734 Retainer Housing
# 2994 Spring
# 3165 Piston (note, this part is reversible)

Do not operate without the retainer housing. Make sure you have the correct style tool bit And it is securely captivated in the tool.



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### **TECHNICAL BULLETIN #6**

#### MODEL 450 SERIES CHIPPING HAMMERS REPAIR KIT # 18649.



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**TECHNICAL BULLETIN #7** 

UNIVERSAL COUPLINGS NOW ON ALL PAVING BREAKERS.



As of March 2007, American Pneumatic Tools, Inc. is adding universal couplings as standard equipment to our Paving Breaker product line.

**Tools updated:-**

M117, Part # 5199 and 5200 M140, M140A, Part # 17923 and 18041 M160, M160A, Part # 5235, 5236, 17746 and 17747 M190, M190A, Part # 5239, 5240, 18618 and 18619

Dixon fittings used:-# 17193 (3/8) – M117 # 17194 (1/2) – M140 and M160 # 17195 (3/4) – M190



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TECHNICAL BULLETIN #8



American Pneumatic Tool is now fitting a 1/2" NPT Air Inlet Bushing to our Demolition Tools as standard equipment.

Whip hose assemblies can now be fitted to the tools without removing any bushings.

The Inlet Bushing comes fitted with a filter screen to help reduce the amount of dirt from entering the tool.

Air Inlet Bushing (Part # 18651) is also available separately.



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### **TECHNICAL BULLETIN #9**

New feature on our 650 Series Chipping Hammers.

## MODEL 650 CHIPPING HAMMERS ARE NOW FITTED WITH AN INLET THREAD OF 1/2" NPT

AVAILABLE ACCESSORIES

**3486** INLET SWIVEL ASSEMBLY (1/2" HOSE BARB)

**3389** INLET SWIVEL ASSEMBLY (3/8" NPT MALE THREAD)

REMEMBER! EVERY NEW M650 SERIES CHIPPER COMES COMPLETE WITH A WHIP HOSE ASSEMBLY!

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### **TECHNICAL BULLETIN #10**

Now available from APT

## SAFETY CABLES



HOSE TO HOSE SAFETY CABLE (APT #18754)

•Safety cables help minimize injuries to personnel and damage to equipment should the coupling fail.

•Spring loaded ends easily slip over couplings and firmly grip onto the hose.

•Safety cables supplement any other safety devices such as safety clips.

•Cables should be installed in a fully extended position as shown •Also available is the hose to tool version.

The spring loaded end grips the hose

with the choker end installed on to a rigid outlet or tool.

#### HOSE TO TOOL SAFETY CABLE (APT # 18755)



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### **TECHNICAL BULLETIN #11**

#### M650 SERIES HANDLE MODIFICATION



#### Regarding the 1/2" NPT inlet hole on the handle.

The handles may have been machined too shallow. (As shown on the handle in the right of the photo)

When the handle is machined correctly, it will look like the handle as shown in the left of the photo. After re-tapping the 1/2" NPT thread, you should see at least 1 to 1-1/2 full threads protruding from the handle as shown by the arrow. Do not tap any deeper as the swivel nut may become thread bound. It is recommended that the whip hose/swivel assembly be screwed directly into the handle, without using any other adapters/screens/reducers etc.

Should you prefer not to modify the handles at your facility, please contact APT to arrange for the modification to be carried out at our facility.

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### **TECHNICAL BULLETIN #12**

#### SIDE ROD SPRING SETTINGS

The settings required for the Side Rod Springs are very important for keeping the tool running efficiently and safely.

Side Rod Springs are designed to prevent damage to the tools by way of reducing the shock being absorbed by parts such as the tappet, tappet bushing and front head components, especially in 'dry firing' situations.

If you are experiencing breakage of the springs and/or side rod bolts or the tool lacks power, several things may be happening:

- The spring setting may be under tight, allowing energy to escape, giving the tool a lack of power.
- If the spring is over tightened, it will reduce the shock absorbing effect and will increase the fatigue of the operator as well as causing damage to the tappet, tappet bushing and front head components. If the tool is 'dry fired' excessively, and the tool is used as a pry bar (trying to remove too large a piece of concrete), this will increase the possibility of breakage to bolts, springs, tappets and tappet bushings.

So, to keep your tool running at its best, set the spring length to within 1/16" of the dimensions listed below, keep the dry firing and prying to the minimum, and check the spring settings periodically.

#### MODEL 140 PAVING BREAKER



#### MODEL 160,180 & 190 PAVING BREAKER



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## **TECHNICAL BULLETIN #13**

#### AIR TOOL LUBRICATION

The importance of having proper lubrication cannot be stressed enough. Without a sufficient amount of the proper oil, you can very easily shorten the life of a pneumatic tool as well as reducing the tools efficiency in the work it should be capable of.

Inadequate lubrication can be very evident when the tool is broken down for service and/or repair and would also normally void any warranty claims.

There are several things to look for in setting up adequate tool lubrication:

- Some tools have an integral oil reservoir and oil metering system built in to the tool, which generally supplies a couple of hours of lubrication. This will need frequent checks and refilling because of their capacity (approx. 1 ½ ounces of oil). No adjustments to the oil supply are required by this system.
- Line Oilers should be used, even if the tool has its own oil lubrication system. These oilers have the benefit of larger capacities, from 3 ounces to 16 ounces, so times between refills are longer.
- Check to see if the correct line oiler is being used for the tool. There are two types, Pressure Feed and Constant Feed oilers. Constant Feed Oilers are typically used on tools that have long running cycles, such as Rock Drills. Because they run for extended period of time, they require lubricating constantly. Pressure Feed Oilers are used on all other 'short cycling' tools. More detailed information on the operation and set up of Pressure Feed and Constant Feed oilers can be found in Technical Bulletins #16 (TDS-1119) and #17 (TDS-1120).
- Line Oilers should be placed within 8 feet of the tool, any longer, the oil is 'wasted' by having to lubricate the hose before it reaches the tool. These oilers also have an adjustable oil flow, which will allow you to have a light or heavy oil mist being supplied to the tool. Care must be taken to avoid over-lubricating the tool as it may tend to make internal parts stick together, making the tool run erratic.
- Make sure the oiler is fitted correctly. There is an arrow on the side of the oiler indicating the direction of flow (towards the tool).
- Make sure the correct type of oil is being used. Light oil is recommended for Paving Breakers, Chipping Hammers, Rivet Busters, Clay Diggers, Tampers and small Rock Drills (9 to 15lb class). This oil should be a 10W oil or 'Air Tool' specific oil widely available on the market. Air Tool oil typically contain additives that prevent rust and oxidation. For the heavier Rock Drills, Rock Drill specific oil should be used. This is heavier oil which contains rust inhibitors and has high lubricating properties, ideal for the more stressful situations found in heavy rock drilling operations.

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## **TECHNICAL BULLETIN #14**

#### WHIP HOSES

The whip hose is probably one of the most important accessories for your construction tool. They are necessary for making the job easier by their lighter weight and also their flexibility. Whip hoses are available in many configurations, mainly by their inside diameter on the hose and the types of connections at either end.

For construction tools, the minimum hose diameter should be 1/2". This size will allow you to run small to medium sized tools. A 3/4" hose should be used for the larger tools such as the 60lb and 90lb tools because of their high consumption of volume of air (C.F.M).

Whip hoses normally connect to a 3/4" compressor hose by universal fittings. Make sure all connections are secure and the correct safety clips and safety cables have been fitted. The construction of the hose itself must be made of oil resistant material and capable of withstanding a far greater pressure than the compressor can deliver.

When selecting your whip hose, length is also important. For construction tools, whip hose should be made up of about 6 to 8 feet long. This is normally the standard length, however different lengths are available. The standard length makes the hose easier to manipulate on the jobsite, any shorter and you will probably be "dragging" along the main 3/4" compressor hose.

When selecting your whip hose, an in-line oiler is also recommended, as a steady flow of lubricating oil will extend the life of the tool. If your tool has an on-board reservoir, you may not need the use of an in-line oiler, but as the tool only has a small capacity oil reservoir, re-filling with oil will be more frequent than with a high capacity in-line oiler. If the tool does not have an on-board reservoir, an in-line oiler on the whip hose is a must.

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### **TECHNICAL BULLETIN #15**

#### **CORRECT MAINTENANCE OF TOOLS**

Correct maintenance of any air tool is essential to insure the efficiency that the tools were designed for, provide the safest working environment for the operator, and keep repair costs to a minimum.

Whether you are a rental company or a contractor who owns and operates the tools, the procedures of maintaining the tools will be the same, probably the only difference would be the time schedule of the maintenance program you establish.

If you are renting tools out on a daily basis, your maintenance plan is heavily influenced by time. By this, we mean, when tools come back from rent, you will want to turn it around in the shortest time possible so that they are ready to rent again.

If you are an owner operator, you can be a little more flexible in your maintenance program, depending on the frequency of use of the tools. Whereas the rental companies should complete maintenance procedures after every rental, the owner operator should be scheduling maintenance at least once a quarter if the tools are used infrequently, and at least once a month if the tools are used frequently.

Key points for the maintenance program:

- WHY? Remember, the goal of preventative maintenance is to detect any parts that are starting to show fatigue/excessive wear before it fails and spreads the damage to other parts. This also applies to any accessories that were used such as whip hoses, oilers etc.
- **INSPECTION** Inspect each tool closely before/after every use of the tool for any loose, cracked, damaged or defective components.
- **OPERATION** If possible ask the operator on how the tool performed and if they had any concerns or problems they may have encountered.
- **CLEANING** While testing the tool, you should flush it out with a solvent by pouring a small amount of solvent into the inlet before running. Care must be taken to direct the exhaust away from the operator, others present and any materials/equipment in the area. Flushing will help to remove accumulated dirt and debris out of the tool.
- **LUBRICATION** After flushing, be sure to run some 10W oil through the tool to relubricate the internal components.

If you need more detailed information on maintenance and repair, engineers and service technicians are available at our facility for you to talk with. Please contact APT by any of the methods listed below.

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### **TECHNICAL BULLETIN #16**

#### IN LINE LUBRICATORS – PRESSURE FEED TYPE (Delivers a single shot of oil each time the trigger is activated)

With the tool not being operated, the chamber 'A' and chamber 'B' is pressurized equally at 90 psi. When the tool is turned on by depressing its throttle lever or trigger, the air flows to the tool from chamber 'B', temporarily lowering the pressure to about 85 psi in the chamber. This difference in pressure allows the oil from chamber 'A' at 90 psi, to be injected into chamber 'B' and into the airflow, supplying the tool with oil. After a short time with the tool running, the pressures between the two chambers equalize again and at that point the oil will no longer enter the airflow. This is why this type of oiler is well suited to tools that are being cycled on and off periodically.



When air outlet is shutoff, both chambers 'A' and 'B' are equalized at 90 psi, therefore no oil is pushed into chamber 'B'



When air outlet is open, Chamber 'B' pressure temporarily drops to approximately 85 psi allowing oil to be injected into chamber 'A' at 90 psi into chamber 'B' until pressure equalizes in both chambers.

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### **TECHNICAL BULLETIN #17**

#### IN LINE LUBRICATORS – CONSTANT FEED TYPE (Delivers a constant supply of oil all the time the trigger is activated)

With the tool not being operated, the chamber 'A' and chamber 'B' is pressurized equally at 90 psi. When the tool is turned on by depressing its throttle lever or trigger, the air flows to the tool from chamber 'B', lowering the pressure to about 85 psi in the chamber. This difference in pressure allows the oil from chamber 'A' at 90 psi, to be injected into chamber 'B' and into the airflow, supplying the tool with oil. Air is constantly being fed into the oil chamber 'A' by way of a check valve 'C', keeping the pressure always at 90 psi. The difference in the air pressures between the chambers allows the transfer of the oil from chamber 'A' to chamber 'B' constantly. This is ideally suited for long cycle operated tools such as rock drills.



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### **IN-LINE OILERS**



Part #	Туре	Capacity	Inlet/Outlet
			Connections
18307	Pressure Feed	1.4 oz (Xsmall)	<sup>1</sup> / <sub>2</sub> -14 NPT female
17755	Pressure Feed	3.7 oz (small)	3/4-14 NPT female
17756	Pressure Feed	11.0 oz (medium)	3/4-14 NPT female
17757	Pressure Feed	16.0 oz (large)	1-11 <sup>1</sup> / <sub>2</sub> NPT female
18646	Constant Feed	11.0 oz	3/4-14 NPT female

Note:

#18646 Constant Feed Oilers are designed for use on rock drills only. Refer to Technical Bulletin #17 for more details. (TDS-1120)

For information on Pressure Feed Oilers Refer to Technical Bulletin # 16 (TDS-1119).

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