

# "EQUALIZER"

**CORRECTS THE COMPROMISED LUBRICANT OUTPUT  
OF DIVIDER BLOCK SYSTEMS**

**PATTON®**  
DIVIDER BLOCK SYSTEMS

Pro-Tecting "Your" Compressor

**ALL DIVIDER BLOCK SYSTEMS ARE COMPROMISED AND  
ARE NOT INJECTING THE CALCULATED QUANTITY OF OIL!**

**FOUR (4) CRITICAL REASONS THE WORKING  
PRESSURE OF ALL DIVIDER BLOCK SYSTEMS  
SHOULD BE EQUALIZED WITHIN 200 PSI!**

**1. "Ensures divider block pistons  
move fluidly and dispense the calculated  
volume of oil to rings, rods, packing &  
cylinders!"**

**2. "Reduces problems associated with  
divider block lock up, and blown  
rupture discs!"**

**3. "Increases the longevity and  
reliability of all divider block systems!"**

**4. "Increases the runtime, reliability and  
longevity of compressor wear  
components!"**

## **"THE EQUALIZER"**

**Adds Reliability and Longevity to  
Cylinders, Rings, Rods & Packing, Plus  
Extends The Life of Divider Block Systems**



Part#  
PLP-EQLZ

1/4" Tube Fittings For  
Quick & Easy Installation  
in Tubing Lines

Lock Nut Secures Set  
Pressure

Easy to Adjust or  
Change Opening  
Pressure Settings

Stainless Steel  
Construction

**\* 5 Year Warranty**



INTELLECTUAL PROPERTY  
US PATENT PENDING

**SAFEGUARD YOUR COMPRESSOR RINGS, RODS & PACKING  
BY INSTALLING EQUALIZERS ON ALL DIVIDER BLOCK OUTLETS!**

**PATTON DIVIDER BLOCK SYSTEMS**

**Pro-Tecting "Your" Compressor**

1.888.788.4402  
www.pattonlube.com  
curtis@pattonlube.com

Patton Divider Block Systems  
1004-B South Midkiff Rd.  
Midland Texas 79701

**BUILT TANK TOUGH  
2-Year Factory Warranty**

All trademark names are the property of their respective companies and not associated with Patton Lubricator Products

# DIVIDER BLOCK SYSTEMS OPERATING WITH OVER 200 PSI DIFFERENTIAL PRESSURE BETWEEN LUBE POINTS ARE COMPROMISED, AND DO NOT DISTRIBUTE THE CORRECT VOLUME OF OIL, DUE TO SHORT STROKING OF INTERNAL PISTONS!

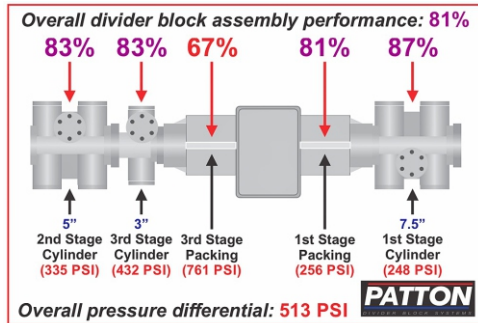
## What is The Definition of Differential Pressure?

Differential pressure is the difference between the lowest and highest pressure the divider block system is working against to inject lubricant into the rings, rods, cylinders and packing glands of the compressor.

*D.P.S.S. is the term Patton Lubricator Products uses to describe the forceful, erratic, and inconsistent travel of divider block piston moving within its body. The distance traveled by the divider block piston is significantly affected by contrasting pressures each individual piston is working against to inject a specific amount of oil to the rod packing and cylinder.*

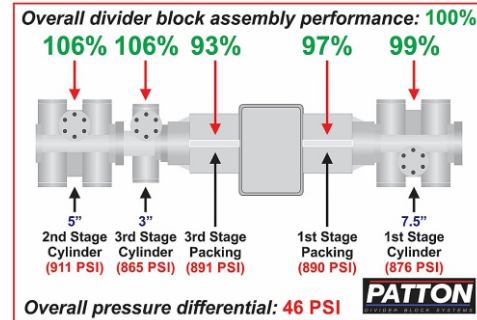
## FIELD DOCUMENTED DPSS

Individual Assessment of Each Lubrication point on a Two Throw 3 Stage Compressor, With In-Board 3rd Stage Cylinder, Proving Reduced lubrication Caused By D.P.S.S..



## FIELD DOCUMENTED DPSS

Assessment of Each Lubrication Point After System Pressure on Each Injection Point Was Equalized Within 200 PSI.



Percentages reflect the amount of oil being delivered from each block output at the cycle time recorded during testing.

(Percentages of 100% would indicate accurate delivery of oil)

Pressure for all lines were measured upstream of the injection point with the unit running at full speed and loaded.

**NOTE:** Three compressors were tested yielding the same results. All divider block system components were new and properly installed.

## What Causes Differential Pressure Short Stroking (DPSS)?

When the working pressure of all divider block outlets are not equalized within 200 PSI, the differential pressure between the injection points will cause the pistons in the block to short stroke. The shortened travel of the pistons seriously reduces the volume of oil that was calculated to lubricate the pistons, rings, rods and packing.

**NOTE:** The only proven method to prevent the short stroking of divider block pistons, and ensure the correct volume of oil is injected into the lubrication points, is to equalize the pressure on all tubing lines serviced by the divider block!

## Consequences of Differential Pressure on Divider Blocks:

**A.** Divider blocks operating with differential pressures exceeding 200 PSI can cause the internal pistons in the valve to hit the end plugs of the block causing the pistons to bounce out of sync, locking up the divider block assembly.

**B.** When the discharge pressure of divider block systems are not equalized within 200 PSI, the slap action of the piston can also cause damage and cause spring failure in lube no-flow devices and proximity switches, which in turn will cause the compressor to shutdown on lube no-flow.

## THE RESULTS OF DIFFERENTIAL PRESSURE SHORT STROKING OF ALL DIVIDER BLOCKS IS SHOCKING!

Field and laboratory testing have proven ALL compressor divider block systems ARE NOT lubricating the rings, rods, packing and cylinders with the quantity of oil as designed. The lack of proper lubrication has been causing premature wear and failure of compressor cylinder wear components for decades. Through the years, contract compression companies and compressor owner/operators have come to accept premature wear or failure of components as "what is to be expected after specific run time hours" and roll these expenses into their annual operational costs.

After discovering the phenomenon of D.P.S.S., **"Normal wear and failure of the compressor components is no longer considered Normal.....it is Abnormal" and can be prevented by installing the "EQUALIZER!"**

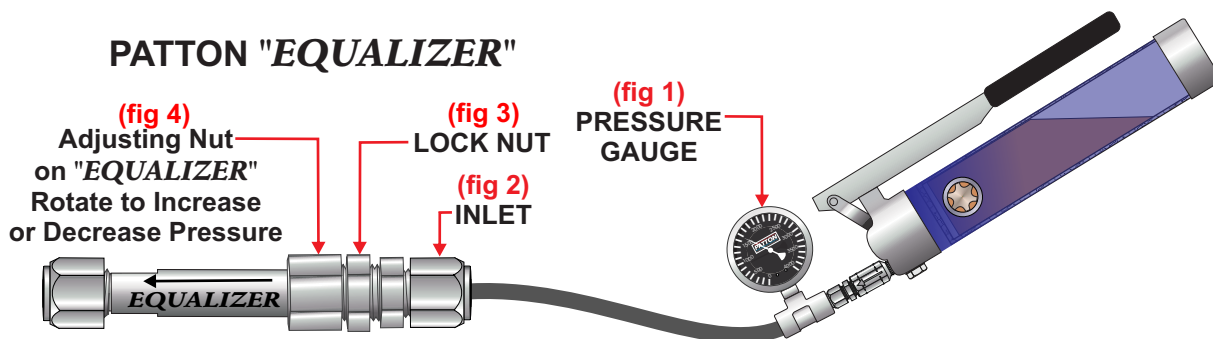
**PATTON DIVIDER BLOCK SYSTEMS**  
Pro-Tecting "Your" Compressor

## PRESET THE OPENING PRESSURE OF THE "EQUALIZER" BEFORE INSTALLATION

**CAUTION:** The opening pressure of the "EQUALIZER" should be preset with a purge gun (in the shop or field) prior to installation on the divider block system. **NOTE:** To preset the Equalizer you must know the highest pressure reading of the gauge on the discharge of the lubricator pump, with the compressor loaded.

Presetting the **EQUALIZER**: Adjust the pressure to open the **EQUALIZER** valve to a minimum of 300 PSI over the highest pressure reading on the gauge at the discharge of the lubricator pump, with the compressor operating fully loaded. After manually presetting the **EQUALIZERS**, install them in each tubing line of the divider block system.

**NOTE:** After installing the **EQUALIZER**, you can make minor adjustments to ensure the pressure gauge pointer is moving fluidly with no more than 200 PSI differential, with the compressor operating at max discharge pressure.



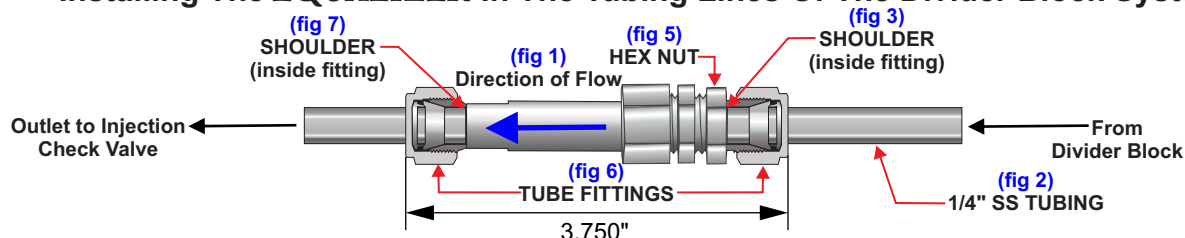
**NOTE: ADJUST AND SECURE THE OPENING PRESSURE OF THE EQUALIZER PRIOR TO INSTALLATION ON THE COMPRESSOR:**

Tools needed: Manual purge gun, crescent wrench and 5/8" open end wrench.

**NOTE:** The lock nut and adjusting nut on the **EQUALIZER** must be sealed with Torque Seal after adjusting the set pressure to ensure the opening set pressure is secured and cannot be tampered with!

1. Connect purge gun to the **EQUALIZER** inlet and slowly pump oil through the unit. (see fig 2)
2. As you're pumping oil into the **EQUALIZER** notice the pointer on the pressure gauge on the purge gun (see fig 1) to verify pressure needed to pump through the unit.
3. Loosen the lock nut (see fig 3) with a 5/8" open end wrench and turn clockwise.
4. Increase opening pressure by rotating the adjusting nut clockwise. (see fig 4)
5. Slowly pump oil through the **EQUALIZER** and continue visually checking the pressure on the purge gun gauge.
6. Continue turning adjusting nut clockwise (see fig 4) until the desired pressure setting is shown on the purge gun pressure gauge.
7. Hand tighten the lock nut (see fig 3) to the adjusting nut, (see fig 4) then place a 5/8" open end wrench on the adjusting nut for a backup. After opening pressure is set, Do Not allow the adjusting nut to rotate! If the adjusting nut is rotated, the pressure desired settings will change. Tighten the lock nut securely with a 5/8" open end wrench to the secure pressure setting. (see fig 3 & 4)
8. After you've set the **EQUALIZER** to the desired opening pressure, spread Cross Check Torque Seal over the adjusting nut and lock nut. (see fig 3 & 4) If the torque seal has been broken at any time after the **EQUALIZERS** have been sealed, it's obvious someone has tampered with the set pressure.

### Installing The EQUALIZER In The Tubing Lines Of The Divider Block System



**Step 1.** Locate a convenient spot in the tubing between the divider block and the injection check valve. Cut out approximately 2 3/8" section of tubing. **Caution:** Deburr the tubing ends to ensure metal particles do not get in the oil supply!

**Step 2.** Confirm the **EQUALIZER** is oriented with the arrow indicating direction of flow (see fig 1) from the divider block towards the injection check valve and install the **EQUALIZER** in the tubing line.

**Step 3.** Fully insert the tubing from the divider block (see fig 2) into the inlet of the **EQUALIZER** until it rests firmly on the shoulder of the integral tube fitting. (see fig 3)

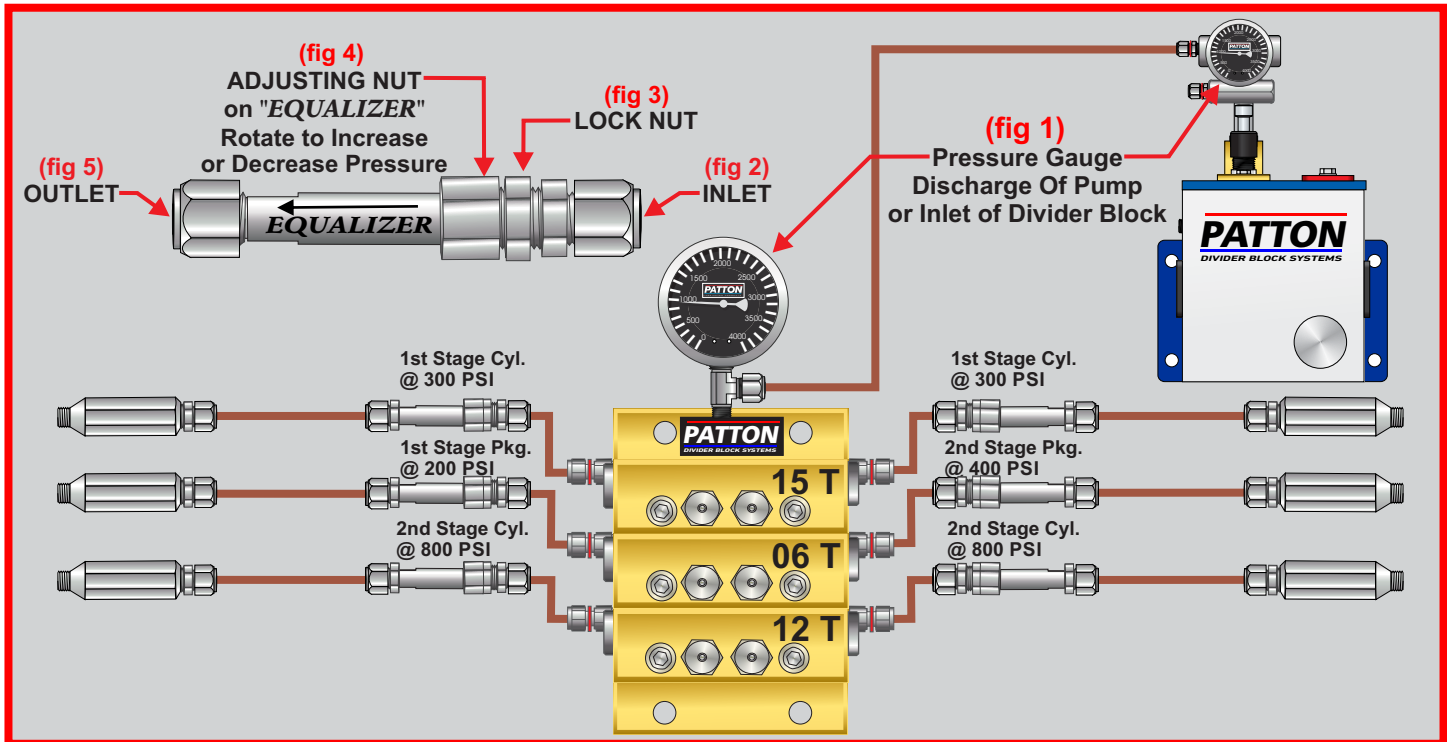
**Step 4.** Rotate the tubing cap (finger tight), then use a backup wrench on the hex end of the **EQUALIZER** (see fig 5) and tighten each tubing cap one and one quarter turns to secure proper sealing at high pressure. (see fig 6)

**Step 5.** Repeat steps 4 & 5 for the outlet of the **EQUALIZER**, remember to fully insert the tubing to the shoulder of both tube fittings. (see fig 7)

# Minor Adjustment Of The "EQUALIZER"

## After Installation In The Tubing Line of The Divider Block System

Equalizing The Working Pressure of All Divider Block Outlets Ensures Cylinders, Rings, Rods & Packing Are Receiving The Calculated Volume of Oil



**NOTICE:** The **EQUALIZER** should be manually adjusted to preset pressure before installation on the divider block system. Locate any convenient section of tubing between the outlet of the divider block and the injection check valve, remove approx 3" of tubing and install the **EQUALIZER**.

- 1) With the compressor operating at max RPM and discharge pressure, note the maximum pressure reading on the pressure gauge installed on the discharge of the lubricator pump or inlet of the divider block. (see fig 1)
- 2) Loosen lock nut with a 5/8" open end wrench and slowly rotate clockwise to increase pressure while monitoring the pressure gauge on the divider block or lube pump. **Note:** If needed a pressure gauge may be temporarily placed in the tubing line to simplify making minor adjustments to the opening pressure on the **EQUALIZER**. (see fig 3)
- 3) Slowly increase pressure by rotating the adjusting nut on the **EQUALIZER** clockwise until you notice the pressure increasing on the divider block system gauge. (see fig 4)
- 4) Continue monitoring the pressure gauge at the discharge of the lube pump (or inlet of the divider block) and slowly rotate the adjusting nut clockwise until the pressure gauge begins to read approximately 300 PSI over the initial system pressure.
- 5) After installing and adjusting the **EQUALIZER**, the gauge should display pressure 300 PSI over the highest peak pressure of the system BEFORE the **EQUALIZER** was adjusted. To secure the pressure setting, use an open end 5/8" wrench as backup and tighten the lock nut against the adjusting nut. (see fig 3 & 4)
- 6) Continue installing and adjusting **EQUALIZERS** on all outlets of the divider block until the pressure gauge holds consistent pressure with no more than 200 PSI rise and fall. **NOTE:** As you install and adjust the other **EQUALIZERS**, the goal is never to increase the pressure reading on the gauge at the pump or divider block after adjusting the first **EQUALIZER**.
- 7) After adjusting all **EQUALIZERS**, the indicator needle on the pressure gauge at the lubricator pump or divider block should fluctuate very little with fluid movement and no erratic pressure changes over 200 psi.
- 8) If the pressure gauge at the pump rises and falls erratically over 200 psi, re-adjust each **EQUALIZER** until the pressure gauge shows less than 200 PSI differential with fluid movement.

**NOTE:** After you've set all **EQUALIZERS** to the desired opening pressure, spread Cross Check Torque Seal over the adjusting nut and lock nut (see fig 2 & 3). If the torque seal is broken it's obvious someone has tampered with the set pressure.