Air Compressor Training

Burton **Compressor**

529 E. Business Highway 83
Weslaco, TX. 78596
Tel: 956-968-3121
Email: compressors@burtoncompanies.com
www.burtoncompanies.com

“Its what you learn after you know it ALL that counts”

- John Wooden

“The future belongs to those who see possibilities before they become obvious”

- John Sculley

Burton

Burton Compressor

529 E. Highway 83 • Weslaco, TX 78596 Ph 956-973-3260 • Fax 956-973-9859 • Email: compressors@burtoncompanies.com

Sales – Rentals - Parts - Service- Instalations

Reciprocating Compressors

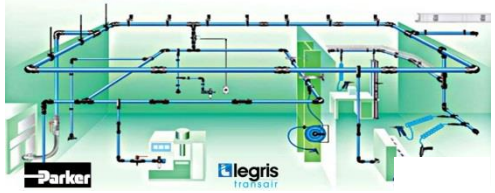
Rotary Screw Compressors 5-500 hp

Vacuum Pumps 1-200 hp

Dryers

Air Treatment

Oil • Filters • Parts



Energy Efficient Aluminum Piping for Compressed Air

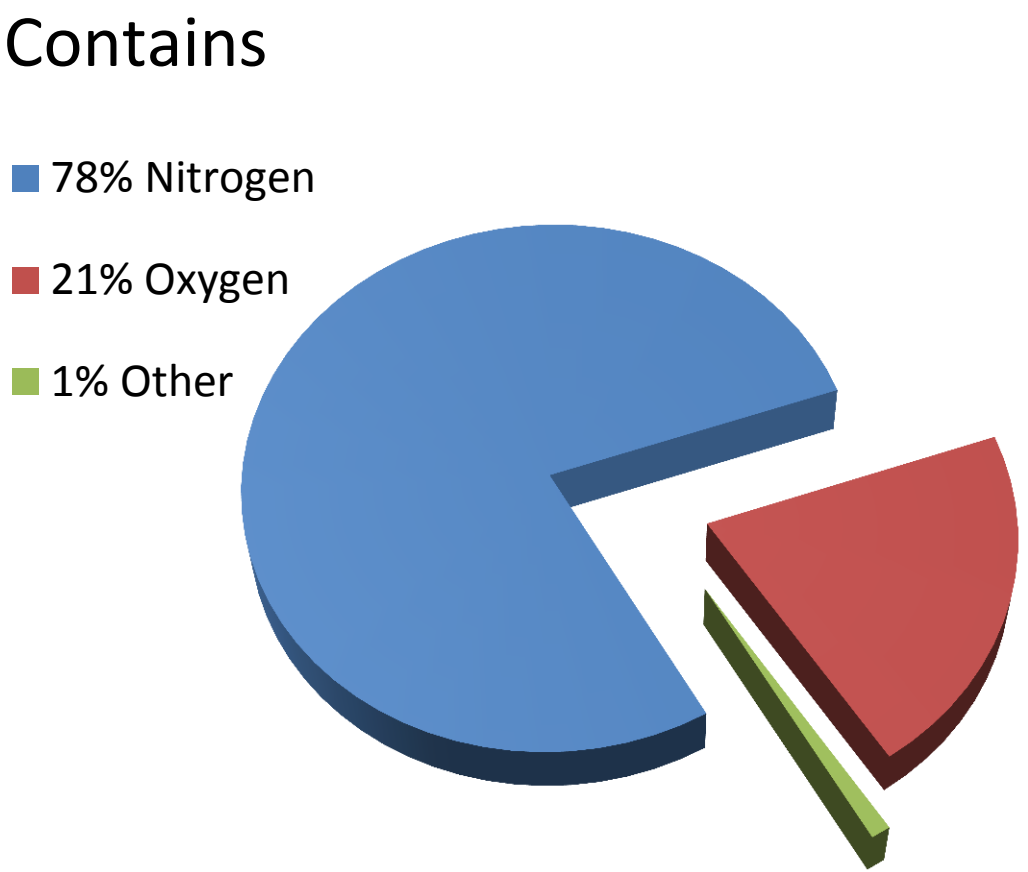
Preventive Maintenance & Repairs

Compressed Air System Training

Burton

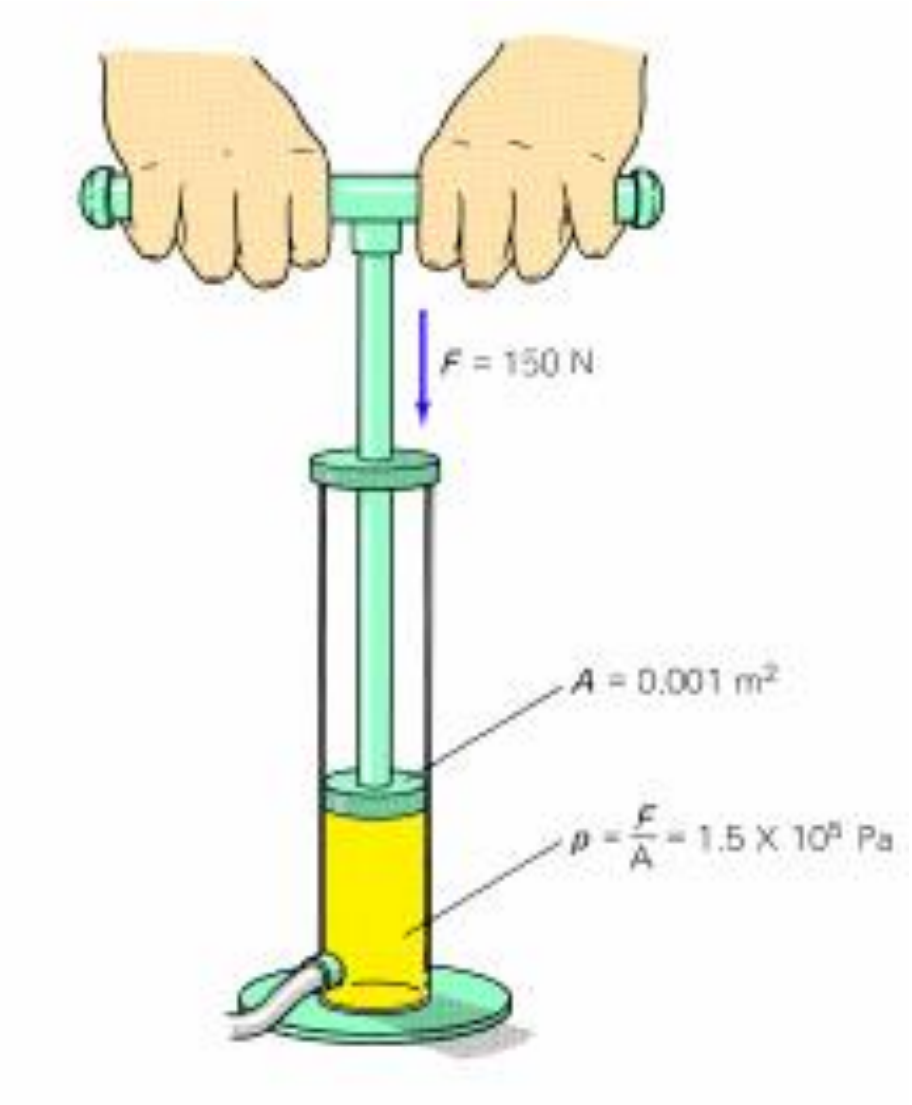
What is Air?

- It is a gas
- It is invisable
- Has no color
- Has no oder



Burton

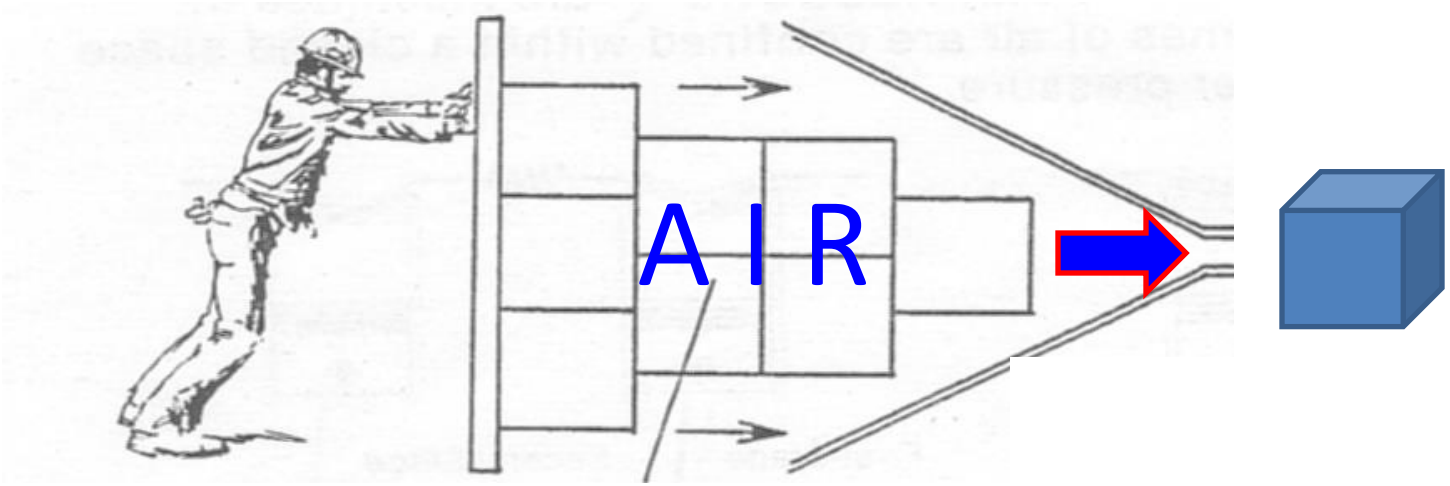
Air Can Be Compressed!



Burton

What is Compressed Air?

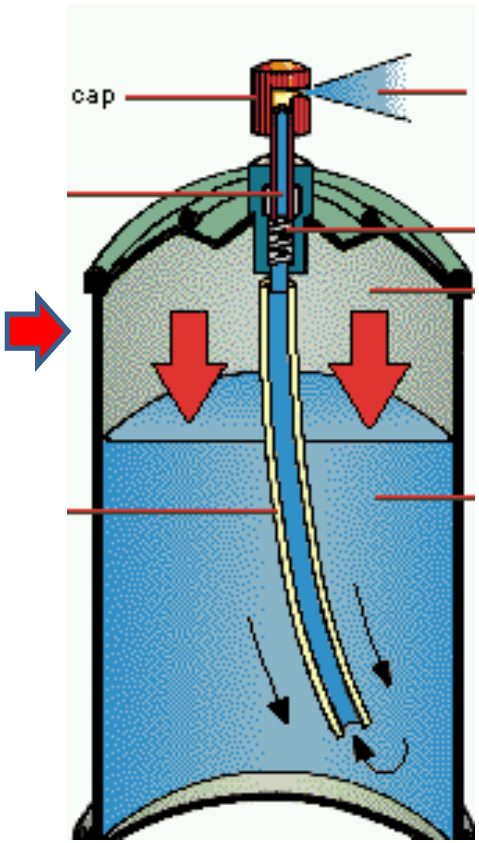
It is air that has been squeezed and stored into a smaller space which then increases its pressure above atmospheric pressure.



Burton

Compressed Air is Stored Energy

Compressed Air



Compressed air performs work when it is released and expands back into the atmosphere

Burton

Compressed Air is the Fourth Utility

It is a utility similar to WATER, GAS, & Electricty.

Energy from compressed air is used to power
pneumatic production equipment

Burton

Compressed Air Has Manny Uses

Examples

Pneumatic Tools

Air Cylinders

Painting

Burton

Why is Compressed Air Used?

- Compressed air is an excellent medium for storing and transmitting energy in order to do work
- It is used to cool components or parts during fabrication
- It is used to blow off waste material
- It is used to move parts

Burton

Why is Compressed Air Used?

- Pneumatic tools cost less
- Pneumatic tools produce less heat
- Pneumatic tools are lighter in weight

Burton

Why is Compressed Air Used?

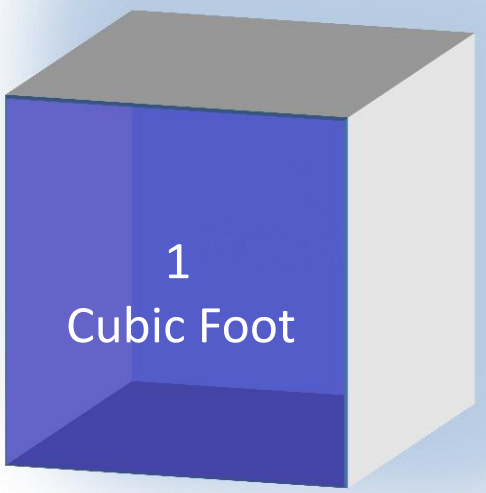
It is less dangerous than electricity

An electrical short may kill you but an air leak is unlikely!

Burton

CFM

- Compressed air is measured in CFM (**cubic feet per minute**)
- This is the VOLUME of compressed air that an air compressor produces in 1 minute



Burton

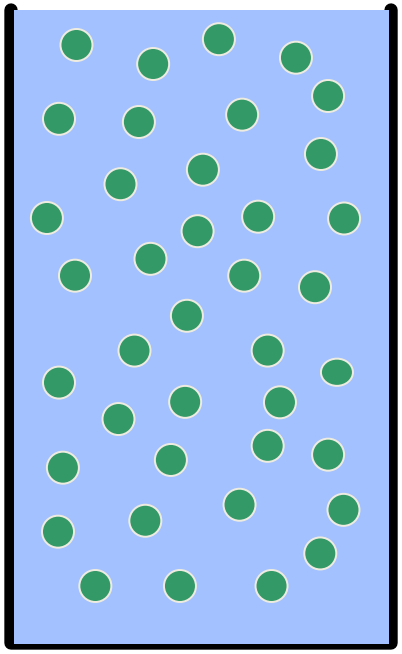
PSI

- **Pounds per square inch**
- This is the measure of FORCE that the compressed air applies

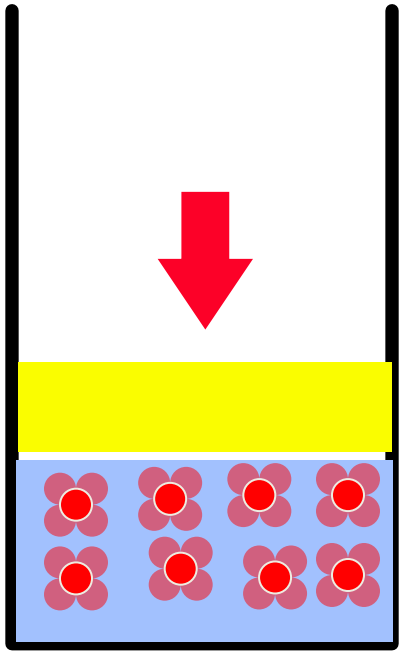
Burton

What Happens When Air Is Compressed?

The space it occupies is reduced
and the air pressure increases



Atmospheric Pressure = 0 PSI



Compressed Air = > 0 PSI

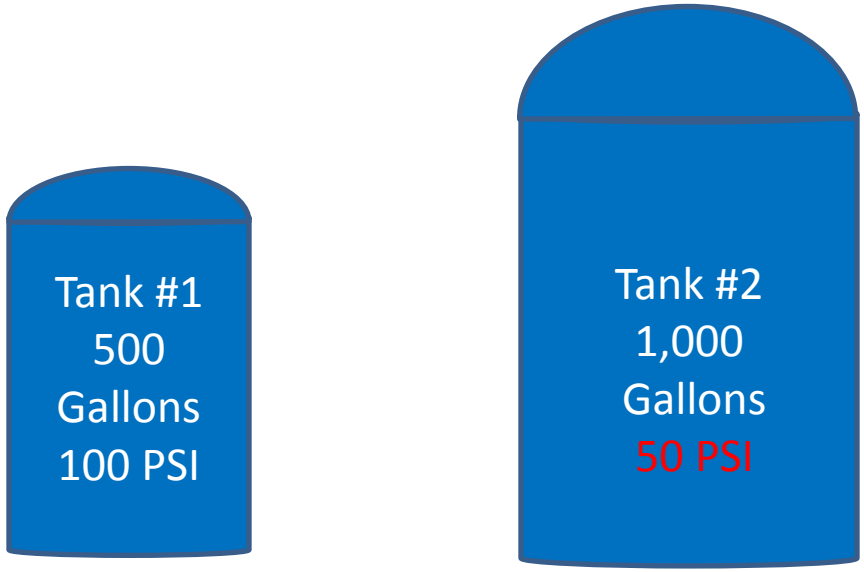
Same amount of air in a smaller space

Burton

Relation of Pressure & Volume

If the air in tank #1 is moved to tank #2
what will the pressure be in tank #2?

The pressure is reduced in half if the volume is doubled

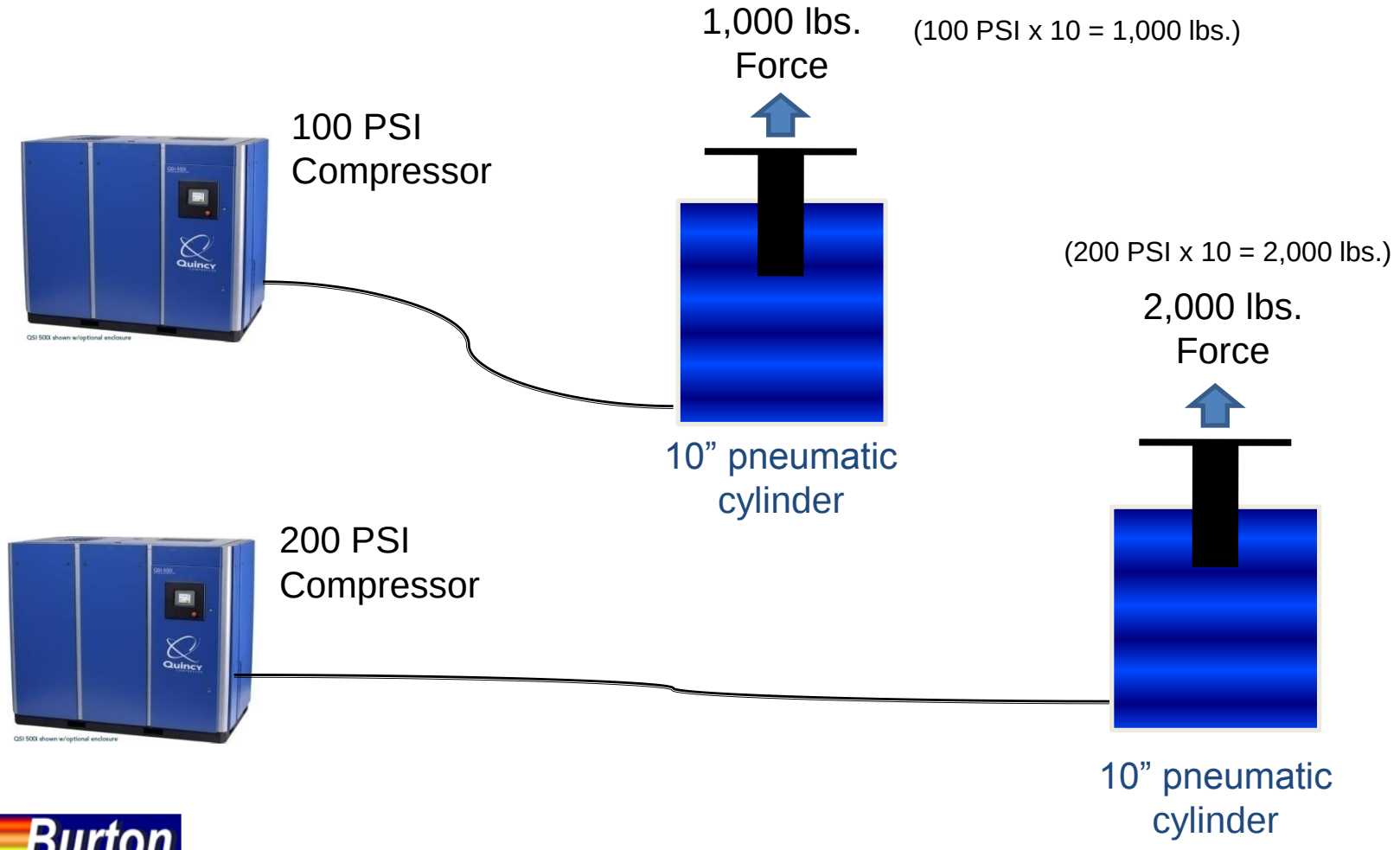


Burton

PSI = Force

Higher Pressure Increases the Applied Force

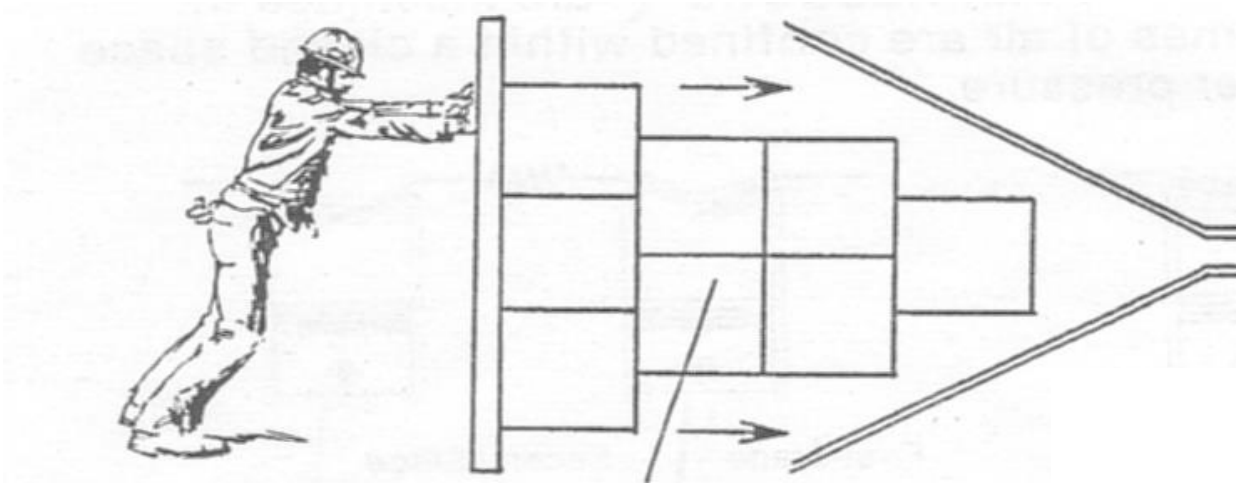
PSI x Diameter of Cylinder = Applied Force

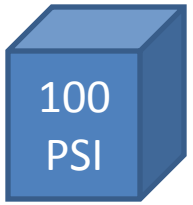


Burton

How Many Cubic Feet of Ambient Air Is Required to Increase the Pressure to 100 PSI?

8 Cubic Feet





Burton

Ambient Air at Sea Level

- Air has weight
- Its weight compresses it and increases its pressure
- At sea level the ambient air pressure is 14.7 PSIA (pounds per square inch absolute)

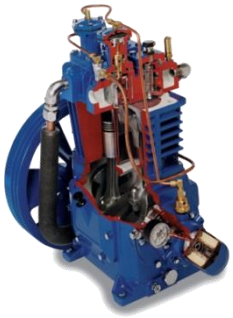
Burton

Air Pressure & Volume Changes with Elevation

- At 29,000 feet above sea level there is less air and the air pressure is only 4.56 PSIA
- The ambient air pressure is reduced by .5 PSIA for every 1,000 feet of elevation
- Also a compressor at higher elevation produces less air volume because there is less air.
- A 500 CFM compressor at sea level produces 500 CFM
- The same compressor at 5,000 feet elevation produces about 400 CFM

Burton

Types of Air Compressors

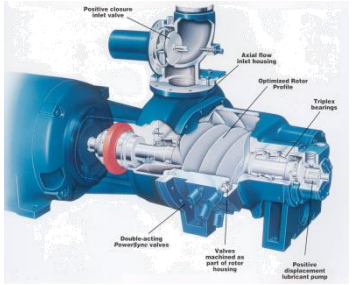


- **Reciprocating**
  - 75% duty cycle

  Designed to operate 75% of the time loaded & 25% of the time unloaded so it can cool down

- **Rotary Screw**
  - 100% duty cycle

  Can operate loaded 100% of the time



QSI 500i shown w/optional enclosure

Burton

Types of Reciprocating Compressors

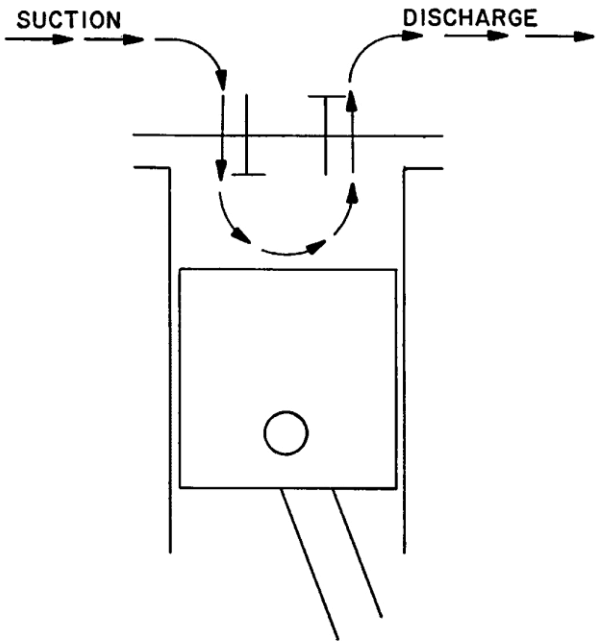
Single Stage

Two-Stage

Burton

Reciprocating Compressor

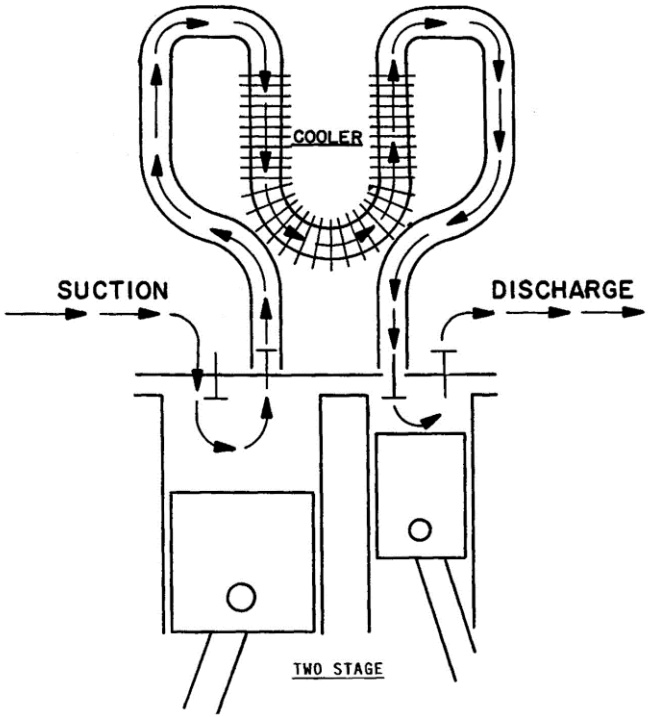
- **Single Stage** - Compressor in which the air pressure is raised from inlet pressure to final discharge pressure in one compression cycle. As a rule of thumb, 100 psig is usually the maximum continuous discharge pressure for single-stage reciprocating compressors.



Burton

Reciprocating Compressor

- **Two Stage**- Compressors in which the air pressure is raised from inlet pressure to final discharge pressure in two compression cycles. Staged compressors have intercoolers between stages to dissipate the heat generated by the first stage compression cycle. They typically operate at a maximum 175 psi.



Burton

Rule of Thumb

A reciprocating compressor produces 3.5 CFM per HP

For example: a 5 HP two-stage reciprocating compressor delivers about 17 CFM at 175 PSI

A screw compressor produces 4.5 to 5 CFM per HP

For example: a 100 hp screw compressor delivers 500 cfm at 100 psi

Burton

Reciprocating Compressors

TYPICAL HORSEPOWER RANGE

1 - 30 HP

Burton

Single Stage Quincy Compressor

- 2 – 3 hp
- 110-135 PSI
- Start-Stop
- Reed valve design
- 75% Duty Cycle

Burton

Quincy Two-Stage Reciprocating Compressors

GOOD	QT	SPLASH LUBE
BETTER	QP	PRESSURE LUBE
BEST	QR	HEAVY DUTY PRESSURE LUBE

Burton

QT Quincy Compressor
Splash Lubricated

- 2 – 15 hp
- Splash lubricated
- Reed valve design
- 75% Duty Cycle

Burton

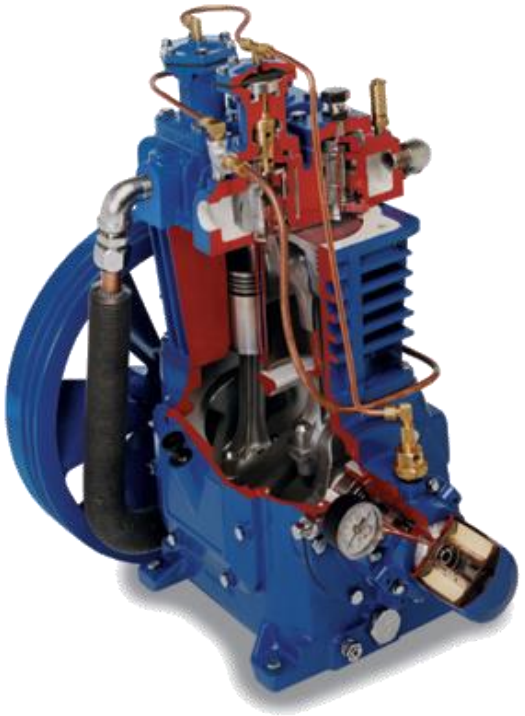
QP Quincy Compressor
Pressure Lubricated

- 5 – 15 hp
- Pressure lubricated
- Oil filter
- Reed valve design

Burton

QR Quincy Compressor
Heavy Duty Industrial Pressure Lubricated

- 1 - 30 hp
- Pressure lubricated
- Heavy Duty Cast Iron
- Oil filter
- Tapered roller bearings
- Slow speed
- 100% Duty Cycle
- Superior valve design
- Oversized components



Burton

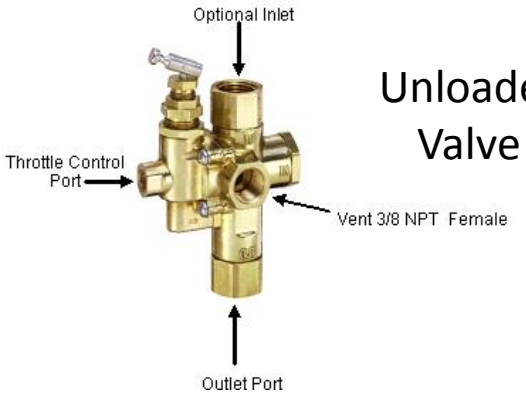
Reciprocating Compressors

CONTROLS

- **Start/Stop**– the compressor motor starts and stops based on the pressure switch cut in and cut out settings, typically no more than 8 motor starts per hour

- **Constant Run** – compressor motor runs continuously based off a pilot valve and head unloader or valve unloader. Used when electric motor starts are more than 8 per hour also used on gas engine units

Pressure Switch



Unloader Valve

Pilot Valve

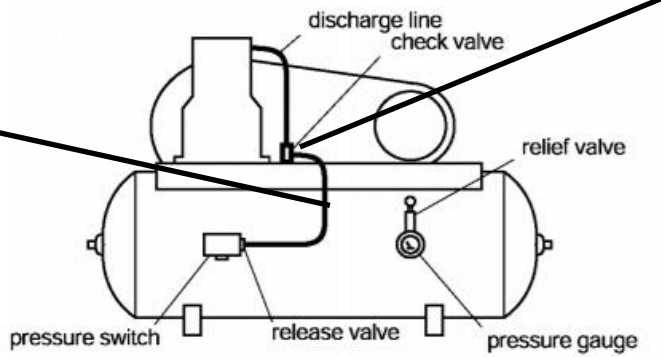
Burton

Reciprocating Compressor

CONTROL PIPING SCHEMATIC

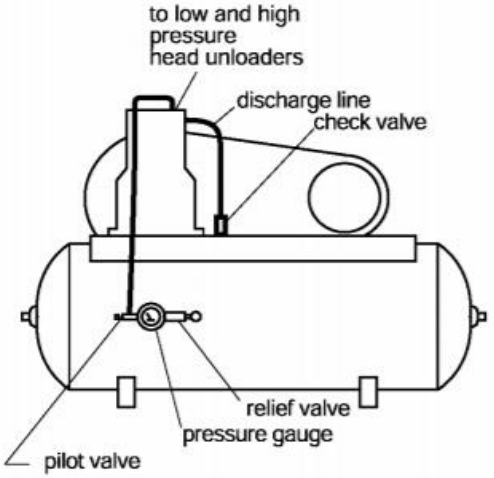
In tank
Check Valve

Unload Line



AUTOMATIC
START STOP

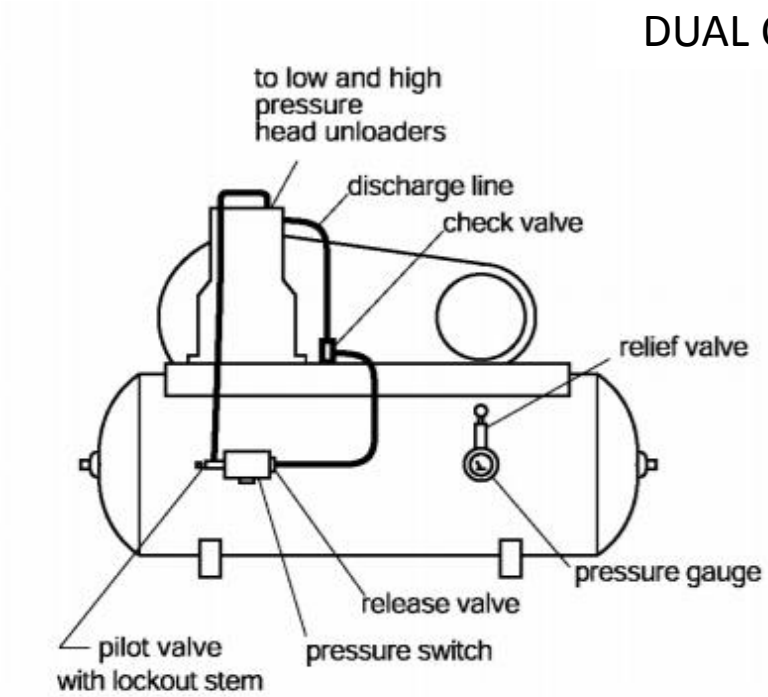
CONTIUOUS
RUN



Burton

Reciprocating Compressor

DUAL CONTROL



Control Piping For Dual Control

For Start / Stop operation the pilot valve is open (stem screwed out)

For Continuous Run operation the pilot valve is closed (stem screwed in)

Burton

Reciprocating Compressors

DUTY CYCLE

- The percentage of time the compressor runs loaded in a given time period
- A typical reciprocating compressor has a 75% duty cycle.
- The compressor can be loaded 75% of the time and unloaded or turned off 25% of the time allowing it to cool down

Burton

Reciprocating Compressor Components

QT Splash Lube

Safety Valve

Intercooler

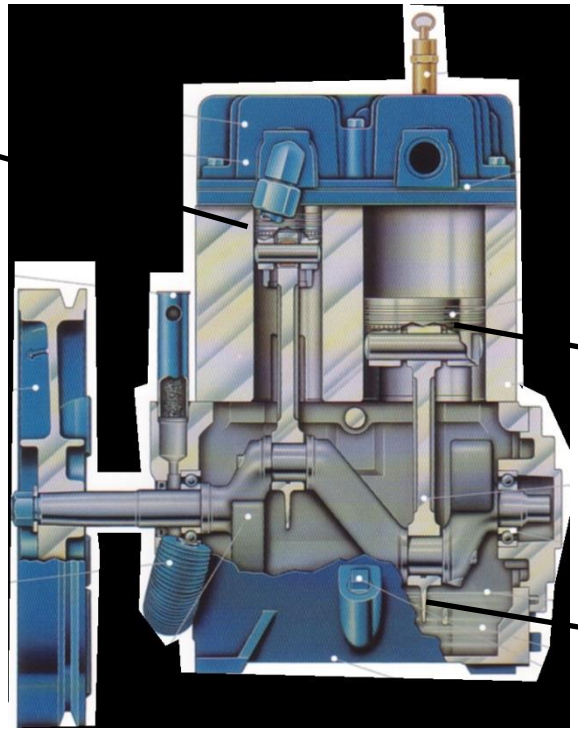
Valve Plate

Flywheel

Burton

Reciprocating Compressor Components

QT Splash Lube



High Pressure Piston

Low Pressure Piston

Dippers

Burton

Reciprocating Compressor Components

Air Filter

Belt Guard

Basic

ASME Tank

Motor

Magnetic Starter

Pressure Switch

Discharge Valve

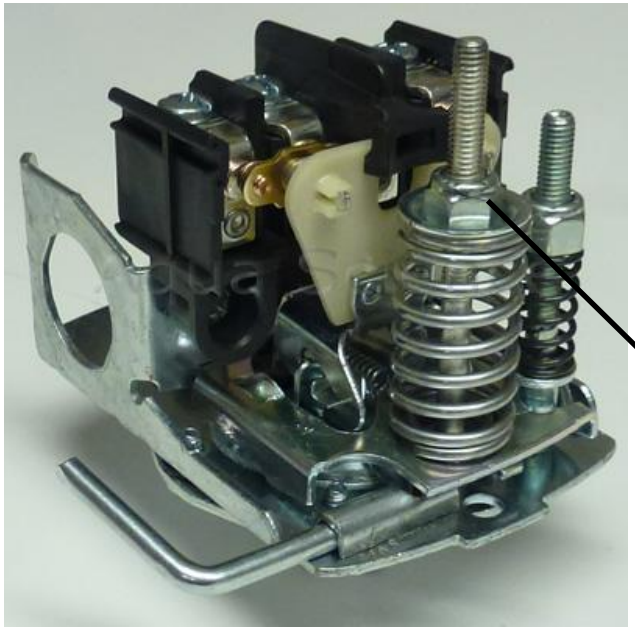
Drain Valve

Burton

Reciprocating Compressors

Pressure Switch

Unload Valve



Pressure Adjustment Clockwise to increase pressure

Burton

Reciprocating Compressor Components

IEC Magnetic Starter

An electromechanically operated switch that provides a safe method of starting an electric motor with a large load. Also provides under-voltage and overload protection.

Required on all 3 phase motors
and most 5 and 7.5 hp single phase

Burton

Reciprocating Compressor Motor Types

TEFC Motor

ODP Motor

Burton

Reciprocating Compressor Motor Tag and Types

Tag Information

- Cat. No.
- Spec.
- HP
- Volts
- Amps
- RPM
- Frame
- HZ
- PH
- Ser.F. (service factor)
- Encl. (enclosure)
- Bearings
- SN

Burton

Electricity
Voltages and Phases for 60 hz

Single Phase	3 Phase
115 volts	200 or 208 volts
230 volts	230 volts
	460 volts

- Incoming voltage can vary 10%
- Compressor motors 10 hp and larger are 3 phase

Burton

Determining Compressor PSI

The equipment that requires the highest operating pressure determines the compressor operating pressure set point.

Burton

CFM Required by Tool

Tool	CFM Required
½” Impact	5
1” Impact	12
Paint Sprayer	10
Air Sander	5

Burton

Guide to Selecting a Reciprocating Air Compressor

CONSIDERATIONS	
APPLICATION	STATIONARY OR PORTABLE
SIZE: CFM, HP	CONTINUOUS DUTY
PRESSURE	LOCATION: INDOORS, OUTDOORS
# OF COMPRESSORS NEEDED	MOTOR ENCLUSURE
OIL FREE AIR	TANK SIZE AND VERTICAL OR HOR.
ELECTRIC MOTOR OR GAS ENGENE	SIMPLEX OR DUPLEX
VOLTAGE AND PHASE	HOW SOON NEEDED

Burton

Compressor Selection Guide

Date		Salesman	
Business		Phone	
Address		Fax	
City, State, Zip		E-mail	
Contact Name		Position	

Compressor Information			
What is the air used for?			
Total CFM Needed including future?		@	PSI
# of compressors required?			
Is it for intermittent or continuous use?			
Time frame compressor needed?			
Existing compressors on site?	Brand		HP
	Brand		HP
	Brand		HP
Is a backup compressor needed?			
Compressor located indoors or outdoors			
Voltage Requirements?			
Cooling Medium – air or water cooled?			

Compressor Selection Guide

If you don't know your air demand at peak production then list the pneumatic equipment to be operated at the same time.			
Equipment	CFM Required	PSI Required	
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total CFM:		Highest PSI:	
RECIPROCATING		SCREW	
Oil Free		Oil Free	
Basic or Base or Tank Mounted		Air-Cooled or Water Cooled	
HP		HP	
Voltage		Voltage	
Controls: (stop-start, constant-run or dual)		Fixed Speed or Variable Capacity or Variable Speed	
Tank & Size – Vert. or Hor.		Cabinet	
Starter		Low Sound adder to Cabinet	
Motor- ODP or TEFC		Base or Tank mounted compressor	

Burton

Compressor Selection Guide

RECIPROCATING		SCREW	
Simplex		Motor – ODP or TEFC	
Duplex with Alternating Panel		Starter – Standard, Reduced Voltage, or Wye Delta	
Low Oil Level Switch		Phase Monitor	
Drain (pneumatic or electric)		NEMA 1 or 4 Electrical Controls	
Flex Hose		Premium Efficiency Drive Motor	
Beltguard Aftercooler		Flex Hose	
Vibration Pads		Vibration Pads	
Extended Warranty Kit			

Burton

Compressor Selection Guide

DRYER	
Type of Application	
Dryer Type: Refrigerated or Desiccant	
Dryer Used With Recip. or Screw Compressor?	
CFM of Compressor	
Ambient Temperature where dryer will be located	
Inlet Temperature of air into the dryer	
Operating Pressure of air into the dryer	
Pressure Dew Point required	
Voltage	
Dryer Model Selected	
Filters	
Particulate	
Coalescing	
Tank	
Vertical or Horizontal	
Size in Gallons	
Pressure	
Drain	
Zero Loss Type	
Electronic Type	
Pneumatic Type	
Other	
Regulator	
Lubricator	

Burton

Effects of Increasing Operating Pressure

- CFM output decreases
- More hp required
- 1% more energy used for every 2 psi increase in pressure
- The motor draws more amps.

The Oposite Happens When Operating Pressure is Lowered

Burton

Reciprocating Compressors We Stock

Burton

Air Compressor

Sales • Parts • Service

SERVICE TRUCK COMPRESSORS

MODEL	BRAND	CFM	PSI	HP	ENGINE	TANK	KIT	BASIC
QT7.5-13H-30-PRO	QUINCY	23.6	175	13	HONDA	30	EWK3	QT7.5
QT7.5-14K-30-PRO	QUINCY	23.2	175	14	KOHLER	30	EWK3	QT7.5
AM1-PH65-08M	Mi-T-M	13.1	100	196 cc	HONDA	8		
AM1-PH65-08WPM	Mi-T-M	13.9	90	212 cc	HONDA	8		

CONTRACTOR PORTABLE COMPRESSORS

MODEL	BRAND	CFM	PSI	HP	VOLTS	TANK	BASIC
Q12120P	QUINCY	7.1	100	2	115/1	20	4116091341
Q12126VP	QUINCY	7.1	100	2	115/1	26V	4116091341
AM1-PE02-05M	Mi-T-M	4.2	90	2	115/1	5	

Reciprocating Compressors We Stock

STATIONARY ELECTRIC COMPRESSORS

MODEL	BRAND	CFM	PSI	HP	VOLTS	TANK	KIT	BASIC
Q13160V	QUINCY	12.3	100	3.5	230/1	60		4116091342
QTV54-60-1-PRO	QUINCY	15.2	175	5	230/1	60	EWK2	QT54
QTV5-80-1-PRO	QUINCY	17.2	175	5	230/1	80	EWK3	QT5
QTV5-80-3-PRO	QUINCY	17.2	175	5	230/3	80	EWK3	QT5
QTV7.5-80-1-PRO	QUINCY	17.2	175	7.5	230/1	80	EWK3	QT7.5
QTV7.5-80-3-PRO	QUINCY	17.2	175	7.5	230/3	80	EWK3	QT7.5
QTV10-120-3-PRO	QUINCY	35	175	10	230/3	120	EWK4	QT10
QTH15-120-3-PRO	QUINCY	52.5	175	15	230/3	120	EWK5	QT15

ROTARY SCREW COMPRESSORS

MODEL	BRAND	CFM	PSI	HP	VOLTS	TANK	Dryer
QGS10WD	QUINCY	37	125	10	208/230/460/3	120	YES
QGS15WD	QUINCY	52	125	15	208.230.460/3	120	YES
QGS30WD	QUINCY	122	125	30	208.230,460/3	120	YES

REFRIGERATED AIR DRYERS

DRYER	BRAND	CFM @ 50	CFM @ 40	FOR COMPRESSOR	VOLTS
QRHT25	QUINCY	25	20	5-7.5 HP	115/1
QRHT50	QUINCY	50	40	10-15 HP	115/1
QRHT75	QUINCY	75	60	20 HP	115/1
QRHT100	QUINCY	100	80	20-25 HP	115/1
QRHT125	QUINCY	125	100	25-30 HP	115/1

EWK KITS EXTEND WARRANTY: PACKAGE FROM 1 TO 2 YEARS & PUMP FROM 2 TO 3 YEARS

Burton

Quincy Gas Engine Compressors

14 hp Kohler

13 hp Honda

Burton

Duplex Compressor

Burton

Quincy Compressor Warranty

Burton

Quincy Compressor Warranty

Series	Standard Warranty	Extended Warranty
Single Stage & Pro units	1 year package 2 years pump	2 years package 3 years pump
QR units	5 year on major components other parts 1 year	
QGS, QGD	5 years airend, drive motor, oil tank, cooler, flex coupling, 1 year package	
QGV & QSI	10 year airend, 5 years drive motor, oil tank, cooler, flex coupling, 1 year package	

Burton

Quincy Compressor Warranty Requirements

Series	Requirements for Warranty
Reciprocating Compressors	Register compressor on line, do maintenance, use original parts and oil
Rotary Screw Compressors	Start-up by Burton, use original parts and oil, do maintenance, send oil samples every 2,000 hours

Burton

Reciprocating Quick Start Guide

Reciprocating Quick Start Guide

Before installing compressor – read and understand instruction manual

1. Remove from shipping crate and install in a suitable location
2. Check the fluid level
3. Have a qualified electrician verify that the supply voltage matches the motor requirements and checks wire size and circuit breakers and overload relays for proper size

Burton

Reciprocating Quick Start Guide

4. Check piping installation
5. Jog the motor to check the rotation of the compressor
6. Register your warranty online at Quincycompressor.com

Burton

Reciprocating Compressor
Quin-Cip Lubricant

112543Q100, Quart
112543G100, Gallon
112543P100, 5-Gallon
112543D100, 55-Gallon

Burton

Reciprocating Compressor Maintenance

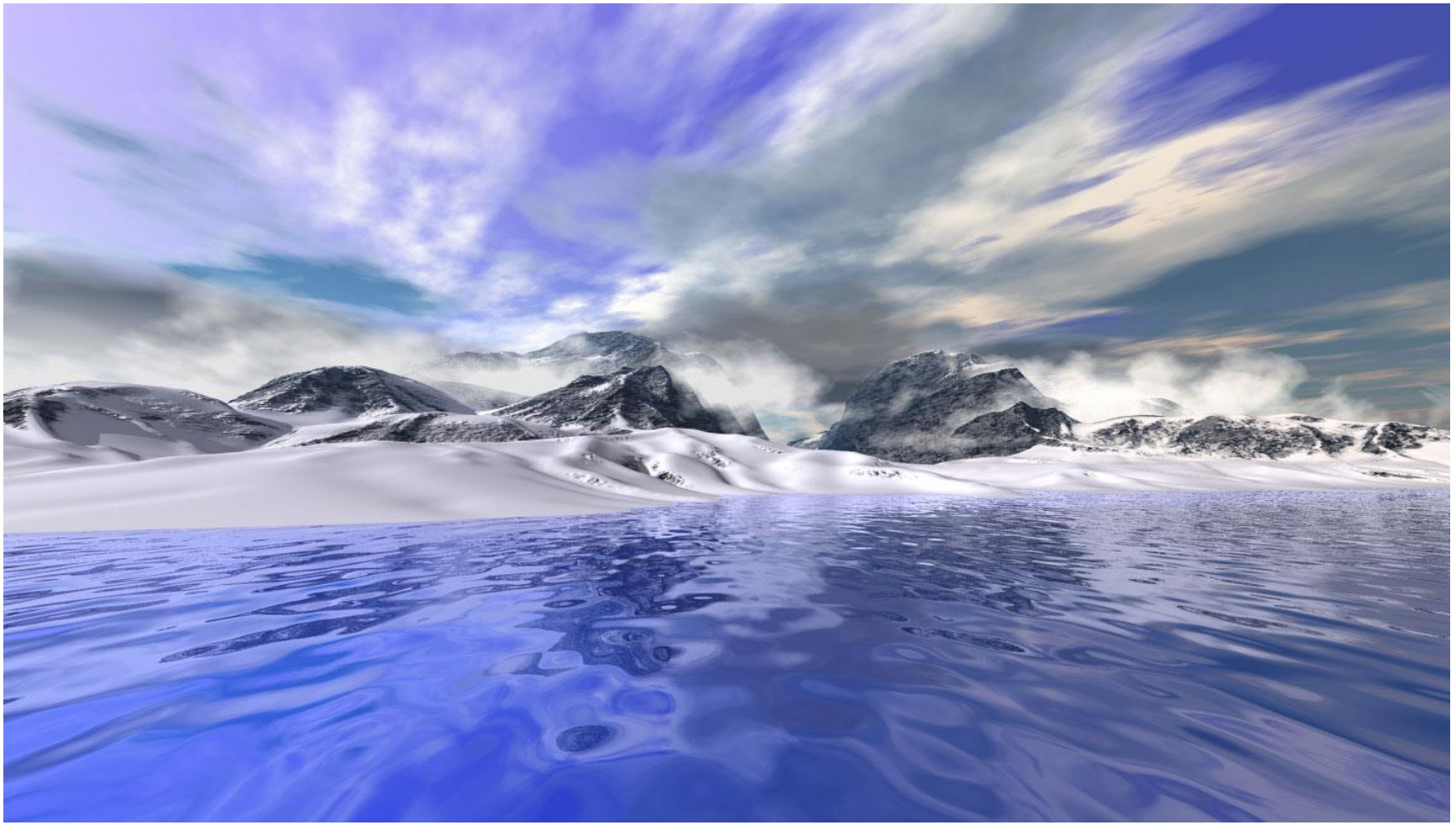
Interval	Procedure
8 hrs.	Check oil level
8 hrs.	Drain water from tank
40 hrs.	Clean or replace air filter
100 hrs.	Replace breaking oil with Quin Cip or Quin Cip D
160 hrs.	Check belt tension
500 hrs. or 3 mos.	Change oil Quin Cip
1000 hrs.	Change oil Quin Cip D if using
2000 hrs.	Inspect pressure switch, contacts on motor starter

Burton

Compressed Air Treatment

Burton

Ambient Air Contains Humidity



Burton

Humidity

It is the amount of water vapor in the air

Burton

A 100 hp Compressor Can Produce

25 gallons in 24 hours

Burton

Compressed Air Treatment

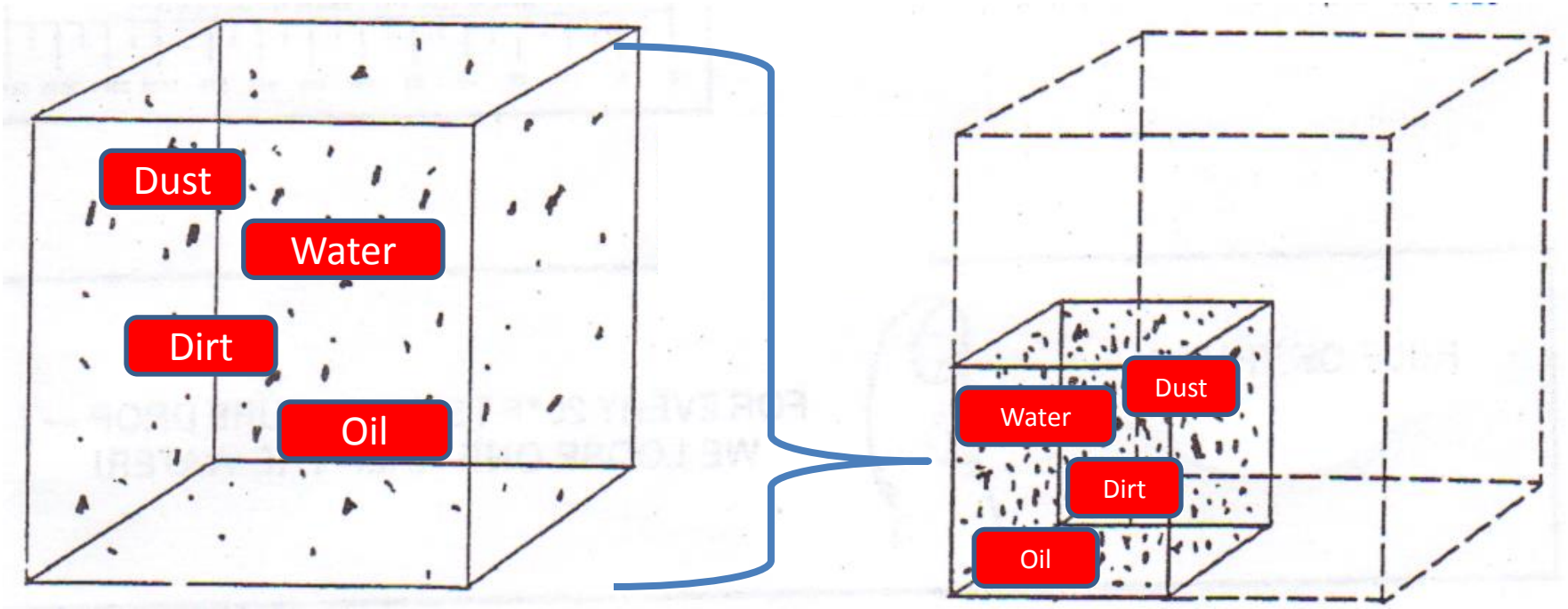
Compressed air has to be clean and dry

before it can be used

Burton

Compressed Air Contains Contaminents

- Atmospheric air naturally contains several impurities such as dust, hydrocarbons and water.
- Lubricated compressors contaminate the compressed air with oil



Burton

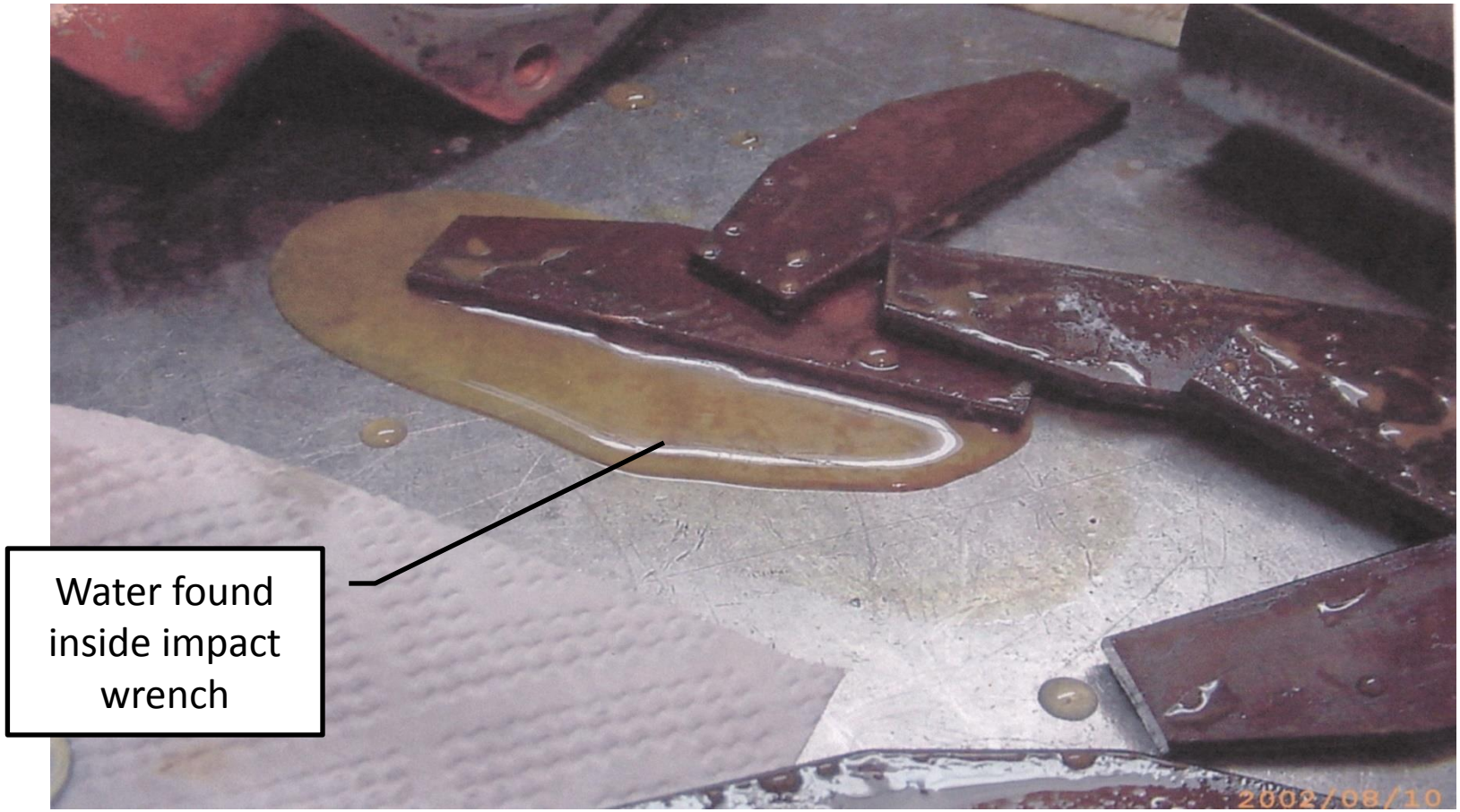
Impurities in Compressed Air Can Cause

- Damage to distribution lines, may cause leaks, clog lines and cause pressure drops
- Increase maintenance cost
- Reduce eficiency and life of pneumatic devices
- Deterioration of final product quality
- Limits the reliability of the production process and all of its components
- Decreases overall profitability

Burton

Harmful Contamination

Water in compressed air damages equipment



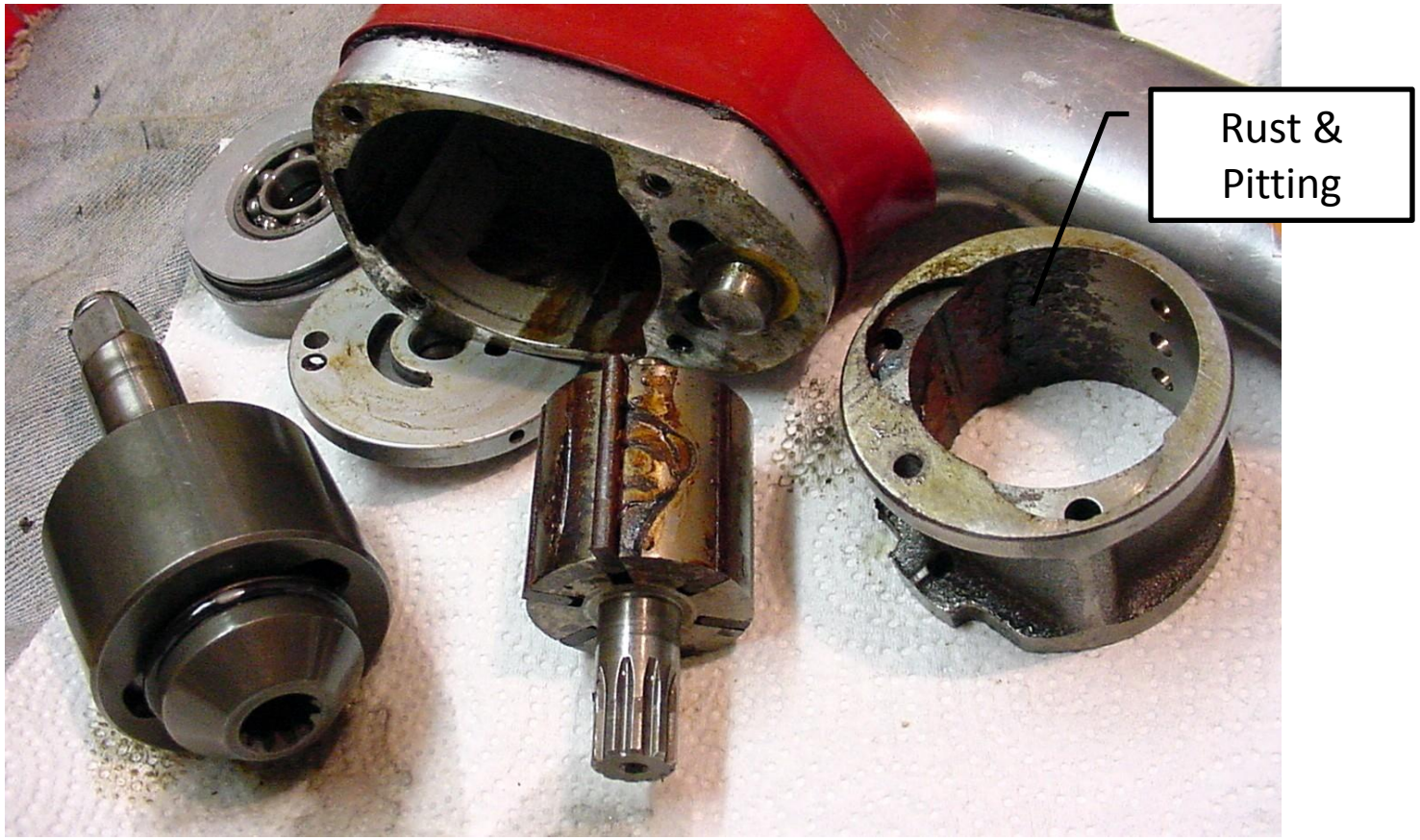
Harmful Contamination

Water in compressed air damages equipment

Burton

Harmful Contamination

Water in compressed air damages equipment



Burton

Compressed Air Treatment

- Solid particulate and oil can be removed by filtration
- Water cannot be removed completely by filtration alone as it remains in a vapor state until it cools and condenses
- A dryer is required to remove the water in compressed air

Burton

Dew Point

- Atmospheric temperture (varying according to pressure and humidity) below which water droplets begin to condense and dew can form
- It is the measure of dryness we want the compressed air to be
- Typical dew point for automotve shops is 50°F
- Typical dew point for industry is 40°F

Burton

Relation of Temperature & Humidity

- Hot air holds more moisture than cool air
- Humidity in air is reduced by 50% for every 20°F reduction in temperature
- A dryer cools the compressed air to a certain temperature and the moisture in the air condenses. The condensed water is removed with an automatic drain.

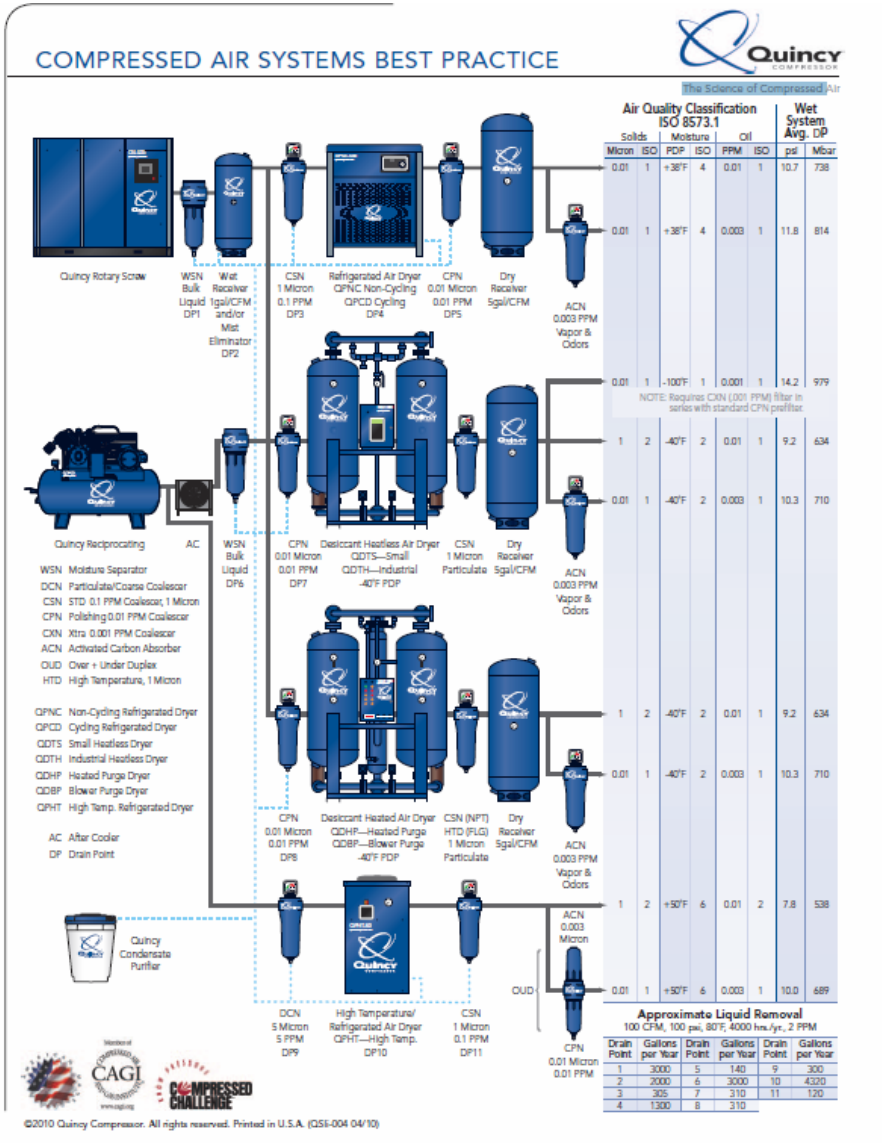
Burton

Moisture is Removed From Compressed Air Using a Systems Approach

- Aftercoolers – 75% removal
- Mechanical Separators
- Filters
- Air Dryer
- Receivers & Pipe
- Filters
- Drains & Drip Legs

Burton

Compressed Air Treatment



Burton

Components of a Compressed Air System

Burton

Aftercoolers for Reciprocating Compressors

Beltguard Aftercooler

Stand Alone Aftercooler

Burton

Air Dryers

High Temperature Dryer

- Dew point 40°F or 50°F
- Inlet Temperature up to 180°F
- Used with Reciprocating Compressors

Standard Refrigerated Dryer

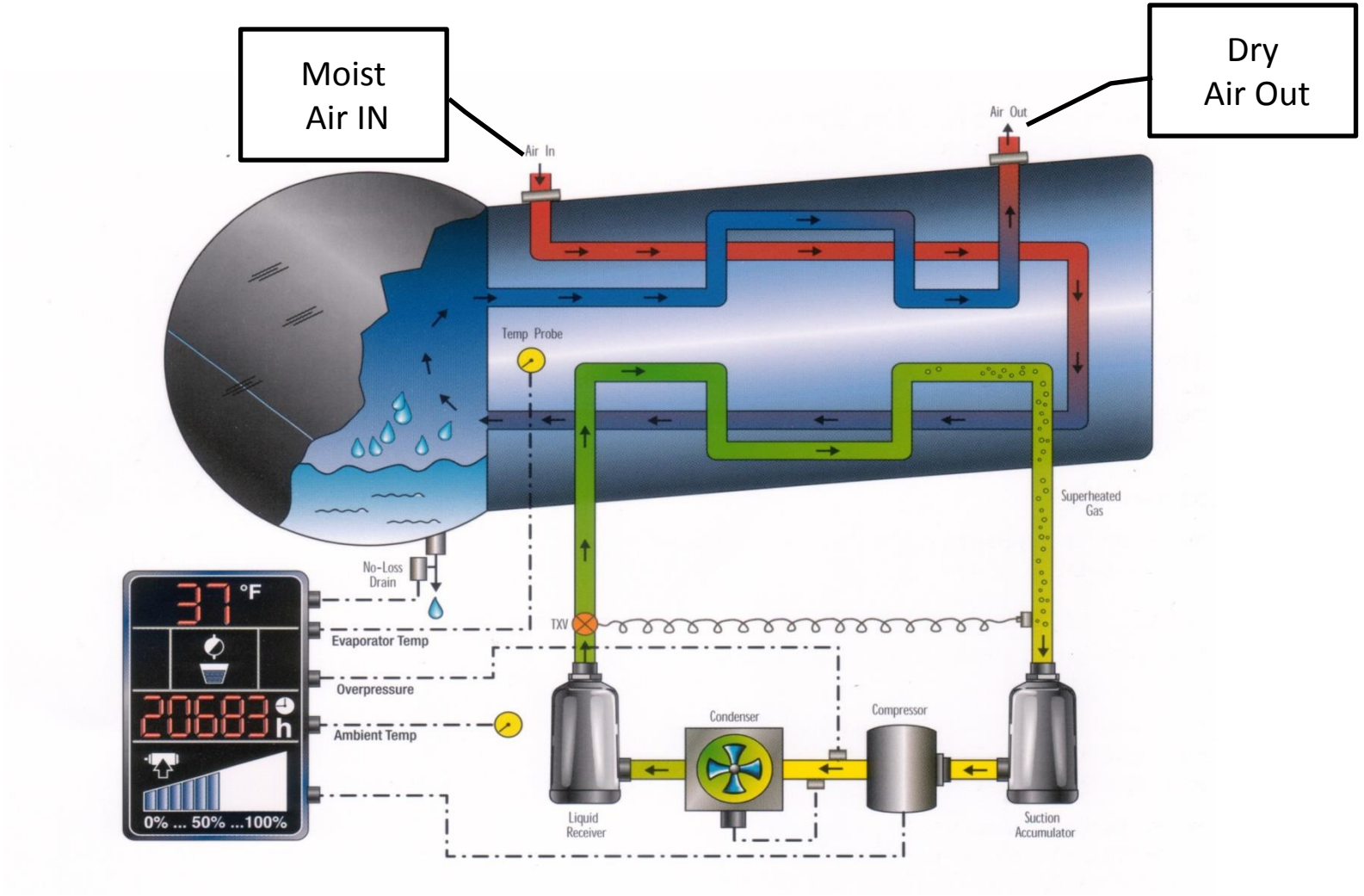
- Dew point 39°F
- Used with Screw Compressors

Desiccant or Regenerative Dryer

- Dew point -40°F

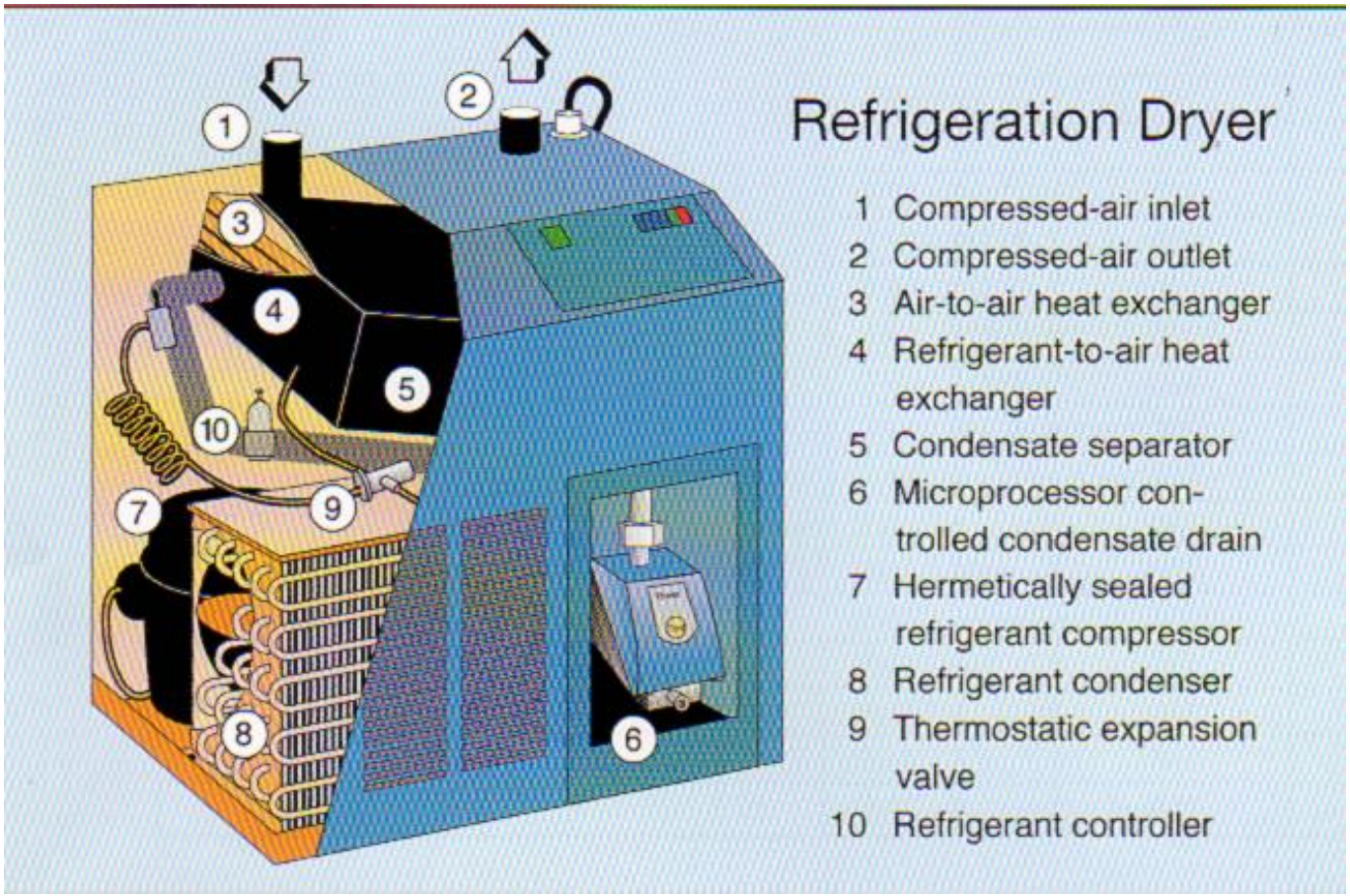
Burton

Refrigerated Air Dryer Flow Schematic



Burton

Refrigerated Air Dryer Components



Burton

Sizing a Standard Refrigerated Air Dryer

Factors that affect dryer efficiency

1. Inlet Air Pressure
2. Inlet Air Temperature
3. Ambmient Air Temperature
4. Dew Point Desired

Burton

Correction Factors for Sizing a Refrigerated Air Dryer

CORRECTION FACTORS

Inlet Air Pressure Correction

	PSI	60	80	100	120	140	150	180	200
A	QPNC 10 - 3000 Factor	0.79	0.93	1	1.03	1.07	1.09	1.12	1.14

Ambient Air Temperature Correction

	Temp.°F	80	90	100	110
C	QPNC 10 - 250 Factor	1.12	1.03	1	0.92
	QPNC 325 - 3000 Factor	1.15	1.07	1	0.91

Inlet Air Temperature Correction

	Temp.°F	80	100	110	120
B	QPNC 10 - 250 Factor	1.05	1	0.87	0.67
	QPNC 325 - 3000 Factor	1.05	1	0.84	0.69

Dew Point Correction

	Temp.°F	37–39°F	45–50°F
D	QPNC 10 - 250 Factor	1	1.12
	QPNC 325 - 3000 Factor	1	1.2

Example One: Conditions
Requirement

Capacity	480 cfm
Inlet Pressure	120 psig
Inlet Air Temp.	110°F
Ambient Temp.	100°F
Dew Point	39°F

Example One: Calculations

$$\text{Dryer Required} = \frac{\text{cfm required}}{(A) \times (B) \times (C) \times (D)}$$

$$= \frac{480}{(1.03) \times (.84) \times (1) \times (1)}$$

= 555 cfm dryer required

Select QPNC 600 for this application

Example Two: Conditions
QPNC 500 Corrected Flow for:

Inlet Pressure	120 psig
Inlet Air Temp.	110°F
Ambient Temp.	90°F
Dew Point	39°F

Example Two: Calculations

$$\text{Corrected Capacity} = \text{Std. Capacity} \times (A) \times (B) \times (C) \times (D)$$

$$= 500 \times (1.03) \times (.84) \times (1.07) \times (1)$$

= 463 cfm

QPNC-25 Non-Cycling Dryer

Burton

High Temperature Refrigerated Air Dryer

REFRIGERATED AIR DRYERS

QRHT — HIGH TEMPERATURE REFRIGERATED DRYER

SPACE SAVING REFRIGERATED DRYER

QRHT Series Total Air System High Temperature Dryers integrate five different components that perform separate functions. An air-cooled aftercooler, refrigerated dryer, moisture separator, Zero Loss drain, and coalescing filter. These five components work in harmony to ensure clean dry, filtered compressed air.

- 180°F Inlet Temperature
- 3-in-1 Design
- Eliminates Water, Oil and Dirt from Air
- Prevents Damage to Pneumatic Tools
- Fewer Finished Product Defects
- Prevents "Fisheye" Paint Splotches
- Reduces Operational Downtime
- Increase Profitability and Productivity
- Eliminates Air Line Purging

QRHT — SPECIFICATIONS & ENGINEERING DATA

High Temperature Model	cfm @ 100 psig	Voltage	Power Consumption Kw	Max psig	Refrigerant	Dimensions L in.	W in.	H in.	Approx Wt. lb.	Connections in.
QRHT 25	25	115/1/60	42	232	R134a	21	14	18	57	1/2" NPT
QRHT 50	50	115/1/60	84	232	R404A	23	19	31	108	1 NPT
QRHT 75	75	115/1/60	169	232	R404A	23	19	31	168	3/4" NPT
QRHT 100	100	115/1/60	163	232	R404A	23	19	41	231	3/4" NPT
QRHT 125	125	115/1/60	203	232	R404A	23	19	41	236	3/4" NPT

Notes: Instrumentation includes: On/off switch, refrigerant suction pressure gauge and drain test button. Coalescing filter is supplied for all models.

Inlet Flow SCFM Model	50°F PDP	40°F PDP
QRHT 25	25	20
QRHT 50	50	40
QRHT 75	75	60
QRHT 100	100	80
QRHT 125	125	100

SCFM flow is rated at 180°F max. inlet, 100 psig and 100°F ambient

High Temperature Refrigerated Air Dryer

QRHT — SPECIFICATIONS & ENGINEERING DATA

High Temperature Model	cfm @ 100 psig	Voltage	Power Consumption Kw	Max psig	Refrigerant	Dimensions L in.	W in.	H in.	Approx Wt. lb.	Connections in.
QRHT 25	25	115/1/60	42	232	R134a	21	14	18	57	1/2" NPT
QRHT 50	50	115/1/60	84	232	R404A	23	19	31	108	1 NPT
QRHT 75	75	115/1/60	169	232	R404A	23	19	31	168	3/4" NPT
QRHT 100	100	115/1/60	163	232	R404A	23	19	41	231	3/4" NPT
QRHT 125	125	115/1/60	203	232	R404A	23	19	41	236	3/4" NPT

Notes: Instrumentation includes; On/off switch, refrigerant suction pressure gauge and drain test button. Coalescing filter is supplied for all models.

Inlet Flow SCFM Model	50°F PDP	40°F PDP
QRHT 25	25	20
QRHT 50	50	40
QRHT 75	75	60
QRHT 100	100	80
QRHT 125	125	100

SCFM flow is rated at 180°F max. inlet, 100 psig and 100°F ambient

Burton

Sizing a Refrigerated Air Dryer

REFRIGERATED AIR DRYERS

QRHT — HIGH TEMPERATURE REFRIGERATED DRYER

SPACE SAVING REFRIGERATED DRYER

QRHT Series Total Air System High Temperature Dryers integrate five different components that perform separate functions. An air-cooled aftercooler, refrigerated dryer, moisture separator, Zero Loss drain, and coalescing filter. These five components work in harmony to ensure clean dry, filtered compressed air.

- 180°F Inlet Temperature
- 3-in-1 Design
- Eliminates Water, Oil and Dirt from Air
- Prevents Damage to Pneumatic Tools
- Fewer Finished Product Defects
- Prevents "Fisheye" Paint Splotches
- Reduces Operational Downtime
- Increase Profitability and Productivity
- Eliminates Air Line Purging

QRHT — SPECIFICATIONS & ENGINEERING DATA

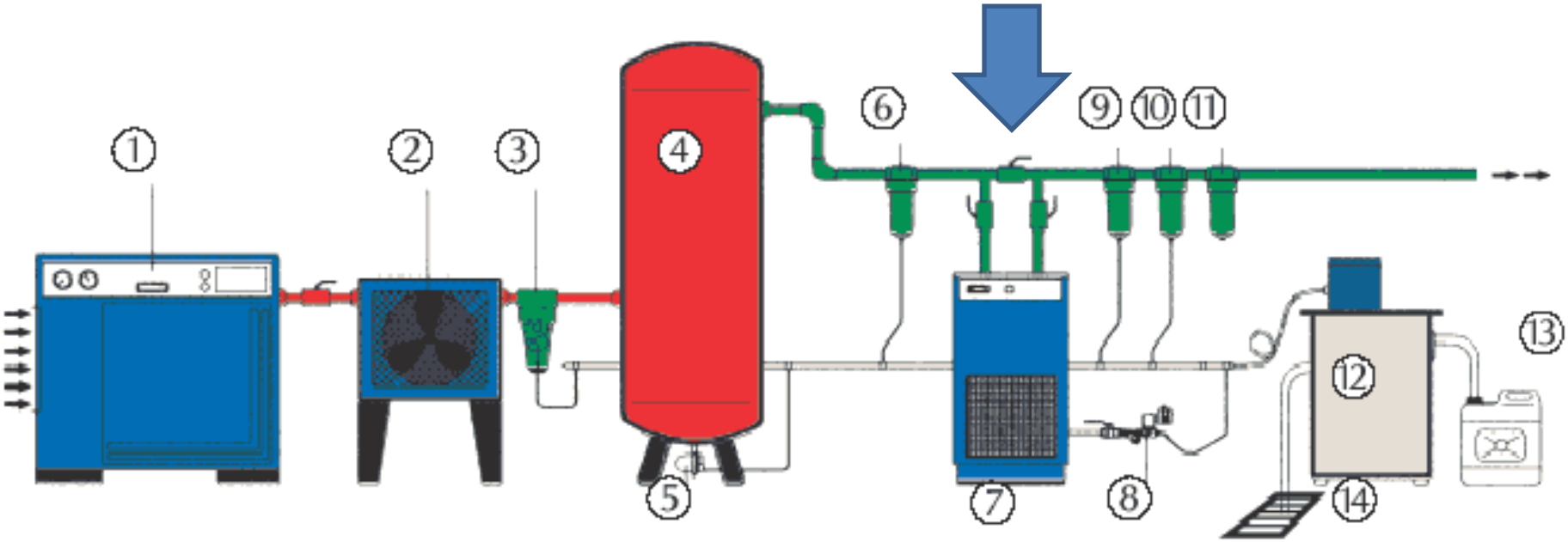
High Temperature Model	cfm @ 100 psig	Voltage	Power Consumption Kw	Max psig	Refrigerant	Dimensions L in.	W in.	H in.	Approx Wt. lb.	Connections in.
QRHT 25	25	115/1/60	42	232	R134a	21	14	18	57	1/2" NPT
QRHT 50	50	115/1/60	84	232	R404A	23	19	31	108	1 NPT
QRHT 75	75	115/1/60	169	232	R404A	23	19	31	168	3/4" NPT
QRHT 100	100	115/1/60	163	232	R404A	23	19	41	231	3/4" NPT
QRHT 125	125	115/1/60	203	232	R404A	23	19	41	236	3/4" NPT

Notes: Instrumentation includes: On/off switch, refrigerant suction pressure gauge and drain test button. Coalescing filter is supplied for all models.

Inlet Flow SCFM Model	50°F PDP	40°F PDP
QRHT 25	25	20
QRHT 50	50	40
QRHT 75	75	60
QRHT 100	100	80
QRHT 125	125	100

SCFM flow is rated at 180°F max. inlet, 100 psig and 100°F ambient

Dryer Installation
3-Way Bypass



Burton

Air Purity Classes – ISO 8573-1

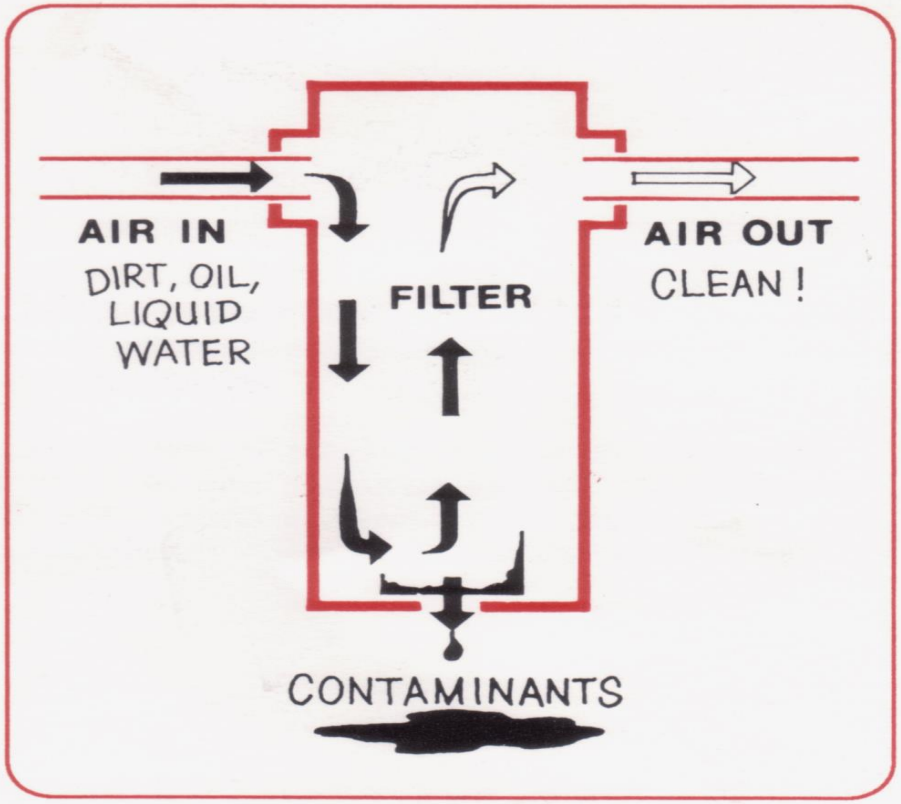
Extract from ISO 8573-1 - threshold values

ISO 8573-1:2010 Class	Solids			Water	Oil
	Maximum number of particles per m³			Pressure Dew Point vapor	Totalshare in oil (liquid aerosol and mist)
	0.1 - 0.5 µm	0.5 - 1 µm	1 - 5 µm		mg/m³
0	According to determination by the instruments user, more severe requirements than Class 1				
1	<= 20.000	<= 400	<= 10	<= -70 °C	0,01
2	<= 400.000	<= 6.000	<= 100	<= -40 °C	0,1
3	--	<= 90.000	<= 1.000	<= -30 °C	1
4	--	--	<= 10,000	<= -3 °C	5
5	--	--	--	<= +7 °C	--
6	--	--	--	<= +10 °C	--
7	--	--	--	<= -40 °C	--
8	--	--	--	--	--
9	--	--	--	--	--
x	--	--	--	--	L10

Burton

HOW TO FILTER COMPRESSED AIR

Principles and Procedures



Burton

Air Filters

Particulate Filter

- Removes solid particles
- Efficiency 90%

Coalescing Filter

- Removes solid particles, liquid water, and oil
- Efficiency 99.9%

Activated Carbon Filters

- Oil vapor, hydrocarbon odors
- Efficiency 99.997%

Burton

QCS Quincy Oil Water Separators

Burton

Burton

Air Compressor

Sales • Service • Parts

WE SERVICE AIR COMPRESSORS

AUTHORIZED DISTRIBUTOR

Quincy COMPRESSOR

Burton

We Sell

Parts for All Major Compressor Brands!

- Quincy
- Almig
- Atlas Copco
- Bauer
- Boge
- Champion
- Curtis
- CP
- Gardner Denver
- Kaiser
- Kobelco
- Palatek
- Powerex
- IR
- Saylor Beal
- Sullair

Burton

We Sell

Filters - Oil - Parts

- Airends
- Air Filters
- Air Gauges
- Ball Valves
- Coolers
- Drains
- Drive Couplings
- Fans
- Flex Hoses
- FRLs
- Line Filters
- Motors
- Oil Analysis
- Oil Filters
- Safety Valves
- Separators
- Solenoid Valves
- Tanks

Burton

Related That Go With the Compressor

- Extended Warranty Kit
- Line Filter
- Air Dryer
- Flex Hose
- Vibration Pads
- FRL
- Tank Drain
- Service Agreement

Burton

Information Required when Requesting a Quote for Parts

- Customer Name and location
- Model
- Serial Number
- Record of Change on Quincy Recips

Burton

Information Required when Requesting a Quote for Parts From Store 90

- Contact Name and location
- Model
- Serial Number
- Record of Change on Quincy Recips

Burton

Troubleshooting

An air system with a refrigerated air dryer has no air downstreem of the dryer

Dryer is Frozen?

Burton

Troubleshooting

A customer comes in to buy a pressure switch because it bleeds all of the air from the air tank through the unloader valve on the pressure switch.

Intank check Valve is Bad

Burton

Troubleshooting

A customer says he is finding a lot of water in the crankcase of the compressor.

Compressor may be to big for the application

Change oil more often

Burton

Troubleshooting

A customer says his compressor does not make the same amount of air it used to.

Bad valves

Burton

Safety Valve

Protects the air tank, piping, and other equipment connected to the compressed air system from explosion should the air pressure exceed designed working pressure.

Burton

What can happen if the system does not have an safety valve?

Burton

What can happen if the safety valve is not the correct one?

Burton

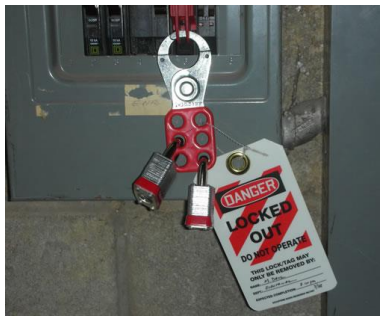
How do you select the correct safety valve?

- The safety valve should protect the system from the worst case situation
- PSI – the safety valve can be set for the MAWP (maximum allowable working pressure) of the air tank.
- CFM – the safety valve flow should be greater than the flow of all of the air compressors connected to the tank.

Burton


KUNKLE VALVE DIV.
BLACK MOUNTAIN, NC
MODEL
SIZE 1-1/2"
SET 150
CAPACITY 2496 SCFM
B283 C465

Use lock out/tag out equipment when working with compressor equipment to prevent accidents.



Burton

Hard Hat

Hearing Proteciton

Safety Shoes

Safety Glasses

Burton

Is it ok to clean yourself with compressed air?

Burton

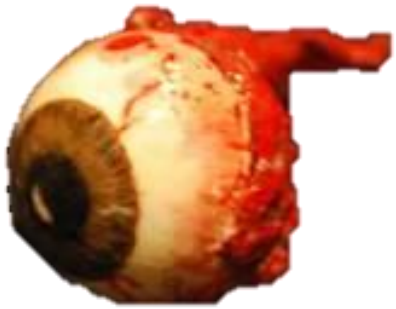
SAFETY FIRST

YOUR LIFE DEPENDS ON IT

Burton

Dangers of Pointing Compressed Air on the Body

- The noise of spraying air can cause hearing loss
- Air blown into the mouth can rupture the lungs or stomach
- Compressed air can enter the blood stream and cause death
- It only takes 12 psi to blow out an eyeball from its socket



Burton