

Compressed Air Technologies (75 HP or less)

Pacific Power provides incentives for many types of energy efficient technologies. Please read the following sections carefully to ensure that you follow the appropriate steps for securing your incentive for compressed air technologies. In the FinAnswer Express program, eligibility for compressed air technologies is limited to customers with compressed air systems containing a single operating compressor less than or equal to 75 horsepower (HP) in size. Technical assistance and financial incentives for compressed air technologies installed on systems with single compressors larger than 75 HP or a multiple-compressor system may be available through Pacific Power's Energy FinAnswer program. For more information about Energy FinAnswer, contact Pacific Power or your vendor. To participate in the Energy FinAnswer program, an incentive agreement must be signed before purchasing your equipment.

Incentives for additional measures may be available. For more information about the FinAnswer Express program, eligibility requirements, incentive levels or other general inquiries, contact your local equipment dealer or Pacific Power. You can visit the program website at pacificpower.net/wattsmart and submit your inquiry online, or you can call our **energy services hotline** at 1-800-222-4335.

LOW-PRESSURE DROP FILTERS

Measure Description: Coalescing filters are designed to remove solids and aerosols from compressed air systems and discharge to the condensate system. Low-pressure drop (i.e., loose-packed, deep bed coalescing) filters have a lower pressure drop and longer element life than standard filters, resulting in reduced compressor energy use.

Applicability: New construction and retrofit installations are eligible for incentive via a post-purchase application process.

Equipment Eligibility: Low-pressure drop filters must be purchased and installed in place of standard coalescing filters on compressed air systems with a single operating compressor 25 – 75 horsepower (HP), and meet all other program terms and conditions. Low-pressure drop filters must meet the following criteria:

1. Pressure loss at rated flow is ≤ 1 psi and ≤ 3 psi at element change.
2. Particulate filtration is 100% at ≥ 3.0 microns, 99.98% at 0.1 to 3.0 microns, ≤ 5 ppm liquid carryover.
3. Filter is deep-bed, "mist eliminator" style, with element life ≥ 5 years.
4. Rated capacity of filter is ≤ 500 SCFM.

Items to submit with application:

1. Dated sales receipt/invoice with install date and retailer/contractor name, address and phone number.
2. Manufacturer specification sheet or nameplate data for air compressor.
3. Itemized listing of quantity, description, manufacturer, model number and other identifying information as appropriate.
4. Compressed Air Application Supplement, see Table 1 at the end of this catalog.
5. A current copy of the Pacific Power utility bill for the address where the item(s) are installed.

Prequalification Required? No.

<u>Equipment Code</u>	<u>Measure Description</u>	<u>Incentive</u>
LPRDFL	Low Pressure Drop Filters	\$.80 / SCFM

PSI = Pounds of force per Square Inch

PPM = Parts Per Million

SCFM = Cubic Feet of air per Minute at Standard conditions (14.5 psia, 68°F, and 0% relative humidity)

RECEIVER CAPACITY ADDITION

Measure Description: Adding receiver volume to select compressed air systems with limited receiver capacity may slow compressor cycling, allow the system to operate at lower pressure, allow for better sequencing of compressors and reduce average compressor power.

Applicability: New construction and retrofit installations are eligible for incentive via a post-purchase application process.

Equipment Eligibility: Eligibility is limited to customers with compressed air systems containing a single operating compressor less than or equal to 75 horsepower (HP) in size and limited or no existing receiver capacity (≤ 2 gallons per SCFM of compressor capacity).

The final receiver capacity must exceed 2 gallons per SCFM of compressor capacity to be eligible for incentives. Compressor must operate using load/unload controls and disable inlet modulation and on/off control. Compressor systems utilizing a variable frequency drive (VFD) or variable displacement control are not eligible to receive incentives for additional receiver capacity.

Items to submit with application:

1. Dated sales receipt/invoice with install date and retailer/contractor name, address and phone number.
2. Manufacturer specification sheet or nameplate data for air compressor.
3. Compressed Air Application Supplement, see Table 1 at the end of this catalog.
4. A current copy of the Pacific Power utility bill for the address where the item(s) are installed.

Prequalification Required? No.

<u>Equipment Code</u>	<u>Measure Description</u>	<u>Incentive</u>
RECCAD	Receiver Capacity Addition	\$1.50 / gal above 2 gal/SCFM

SCFM = Cubic Feet of air per Minute at Standard conditions (14.5 psia, 68°F, and 0% relative humidity)

REFRIGERATED CYCLING DRYERS

Measure Description: Refrigerated dryers cool compressed air to condense and remove water vapor and provide dry compressed air necessary for sensitive instruments, tools or equipment. Cycling refrigerated dryers employ a thermal mass and cycle the refrigeration system only as needed (roughly in proportion to the airflow). Cycling refrigerated dryers can save considerable energy compared to non-cycling refrigerated dryers, which run refrigeration systems constantly, regardless of airflow.

Applicability: New construction and retrofit installations are eligible for incentive via a post-purchase application process.

Equipment Eligibility: Eligibility is limited to customers with compressed air systems containing a single operating compressor less than or equal to 75 horsepower (HP) in size. Equipment must be purchased and installed, and meet all other program terms and conditions.

Incentives are available for installation of a cycling refrigerated dryer with a rated capacity less than or equal to 500 SCFM. The refrigeration compressor must cycle off during periods of reduced air demand. The dryer must operate exclusively in cycling mode and cannot be equipped with the ability to select between cycling and non-cycling mode.

Items to submit with application:

1. Dated sales receipt/invoice with install date and retailer/contractor name, address and phone number.
2. Manufacturer specification sheet or nameplate data for air compressor and cycling refrigerated dryer.
3. Compressed Air Application supplement, See Table 1 at the end of this catalog.
4. A current copy of the Pacific Power utility bill for the address where the item(s) are installed.

Prequalification Required? No.

<u>Equipment Code</u>	<u>Measure Description</u>	<u>Incentive</u>
RECYDR	Refrigerated Cycling Dryers	\$1.50 / SCFM

SCFM = Cubic Feet of air per Minute at Standard conditions (14.5 psia, 68°F, and 0% relative humidity)

VFD CONTROLLED COMPRESSOR

Measure Description: By using a variable frequency drive (VFD) to adjust the compressor speed and capacity, variable-speed oil-injected screw compressors can operate much more efficiently than fixed-speed oil-injected screw compressors at medium and low capacity and maintain a more consistent discharge pressure.

Applicability: New construction and retrofit installations are eligible for incentive via a post-purchase application process.

Equipment Eligibility: Incentives are limited to customers with compressed air systems containing a single operating VFD-controlled oil-injected screw compressor less than or equal to 75 horsepower (HP) in size. Equipment must be purchased and installed, and meet all other program terms and conditions to be eligible.

The unit must adjust compressor speed as the primary means of capacity control and must not use inlet modulation when demand is below minimum speed air production. Incentives for VFD-Controlled compressors are calculated based on compressor size and other system parameters at \$0.15/kWh annual energy savings and are subject to approval by Pacific Power.

Items to submit with application:

1. Dated sales receipt/invoice with install date and retailer/contractor name, address and phone number.
2. Manufacturer specification sheet or nameplate data for air compressor and cycling refrigerated dryer.
3. Compressed Air Application Supplement, see Table 1 at the end of this catalog.
4. A current copy of the Pacific Power utility bill for the address where the item(s) are installed.

Prequalification Required? No. Prequalification is recommended, but not required to receive incentives.

Note: Pacific Power has a calculation software tool available for vendors participating in our Energy Efficiency Alliance (EEA) to calculate project-specific energy savings, project economics, and eligible incentives. Contact your vendor or Pacific Power for more information or visit our website at pacificpower.net/wattsmart for a current list of participating vendors.

<u>Equipment Code</u>	<u>Measure Description</u>	<u>Incentive*</u>
VFDCCM	VFD Controlled Compressor	\$0.15 / kWh

*Energy and demand savings are subject to Pacific Power approval. For assistance calculating the project savings and incentives, contact Pacific Power on our energy services hotline at 1-800-222-4335 or via e-mail to: ca.compair@pacificpower.net

ZERO LOSS CONDENSATE DRAINS

Measure Description: Condensate drains are utilized to remove liquid water from a compressed air system. Timer-type drains periodically vent compressed air, thereby expelling any accumulated water from the system. Zero loss condensate drains remove the water without venting compressed air, resulting in reduced air demand and compressor energy consumption.

Applicability: New construction and retrofit installations are eligible for incentive via a post-purchase application process.

Equipment Eligibility: Eligibility is limited to customers with compressed air systems containing a single operating compressor less than or equal to 75 horsepower (HP) in size. Equipment must be purchased and installed in place of a fixed timer drain, and meet all other program terms and conditions to be eligible.

Incentives are available for zero loss condensate drains that remove liquid water without venting compressed air. Zero loss condensate drains purchased as requirements for other compressed air measures are also eligible for incentives.

Items to submit with application:

1. Dated sales receipt/invoice with install date and retailer/contractor name, address and phone number.
2. Manufacturer specification sheet or nameplate data for air compressor and cycling refrigerated dryer.
3. Compressed Air Application Supplement, see Table 1 at the end of this catalog.
4. A current copy of the Pacific Power utility bill for the address where the item(s) are installed.

Prequalification Required? No.

<u>Equipment Code</u>	<u>Measure Description</u>	<u>Incentive</u>
ZLCOND	Zero Loss Condensate Drains	\$90 / unit

OUTSIDE AIR INTAKE

Measure Description: Permanent ductwork installed between the compressor intake and the outdoors improves the efficiency of an air compressor relative to a system that draws warmer air from inside the equipment room. Advanced systems employ automatic controls to determine whether the outside air or compressor room is cooler, and then supply the air compressor with inlet air from the coolest location.

Applicability: New construction and retrofit installations are eligible for incentive via a post-purchase application process.

Equipment Eligibility: Eligibility is limited to customers with compressed air systems containing a single operating compressor less than or equal to 75 horsepower (HP) in size. Permanent ductwork must be installed between the compressor air intake and the outdoors. Ductwork must meet compressor manufacturer's specifications, which may include (a) ≤ 0.25 " W.C. pressure loss at rated flow, and (b) allow use of compressor room air during extremely cold conditions.

Items to submit with application:

1. Dated sales receipt/invoice with install date and retailer/contractor name, address and phone number.
2. Manufacturer specification sheet or nameplate data for air compressor.
3. Photograph of installed ductwork and air compressor.
4. Compressed Air Application Supplement, see Table 1 at the end of this catalog.
5. A current copy of the Pacific Power utility bill for the address where the item(s) are installed.

Prequalification Required? No.

<u>Equipment Code</u>	<u>Measure Description</u>	<u>Incentive</u>
OUTSAI	Outside Air Intake	\$6 / horsepower

Table 1. Compressed Air Application Supplement
(Submit copy of table with application)

Customer	Customer Name		
	Facility Address		
	Facility City, State, Zip		
	Facility Type		
Existing Compressed Air System	Manufacturer		
	Model Number		
	Serial Number		
	System Operating Pressure (psig)		
	Annual Hours of Operation (hours)		
	Estimated Receiver Volume (gallons)		
	*Oil-injected? (circle one)		YES NO
	*Compressor Heat Rejection (circle one)		AIR WATER
	*Select Type of Part-Load Control (check one)		
	<input type="checkbox"/> Inlet Modulation (Oil-injected Rotary Screw Compressor) <input type="checkbox"/> On/Off (Reciprocating Compressor) <input type="checkbox"/> Load/Unload <input type="checkbox"/> VFD <input type="checkbox"/> Inlet Modulation with Unloading		
	*Rated Capacity at Full Load Operating Pressure (acfm)		
	*Full Load Operating Pressure (psig)		
	*Drive Motor Nameplate Rating (hp)		
	*Drive Motor Nameplate Nominal Efficiency (%)		
*Fan Motor Nameplate Rating, if applicable (hp)			
*Fan Motor Nameplate Efficiency (%)			
*Total Package Input Power at Rated Capacity (kW)			
VFD-Controlled Compressor	If applying for VFD-controlled Compressor incentive, please provide the following information:		
	Manufacturer		
	Model Number		
	Serial Number		
	*Oil-injected? (circle one)		YES NO
	*Compressor Heat Rejection (circle one)		AIR WATER
	*Rated Capacity at Full Load Operating Pressure (acfm)		
	*Full Load Operating Pressure (psig)		
	*Drive Motor Nameplate Rating (hp)		
	*Drive Motor Nameplate Nominal Efficiency (%)		
	*Fan Motor Nameplate Rating, if applicable (hp)		
	*Fan Motor Nameplate Efficiency (%)		
	*Total Package Input Power at Rated Capacity (kW)		

* Refer to cut sheets provided by compressor manufacturer for information on these parameters

HP = Horsepower

PSIG = Pounds per Square Inch Gage

SCFM = Cubic Feet of air per Minute at Standard conditions (14.5 psia, 68°F, and 0% relative humidity)

ACFM = Actual Cubic Feet of air per Minute at a certain point at a certain condition at that point