

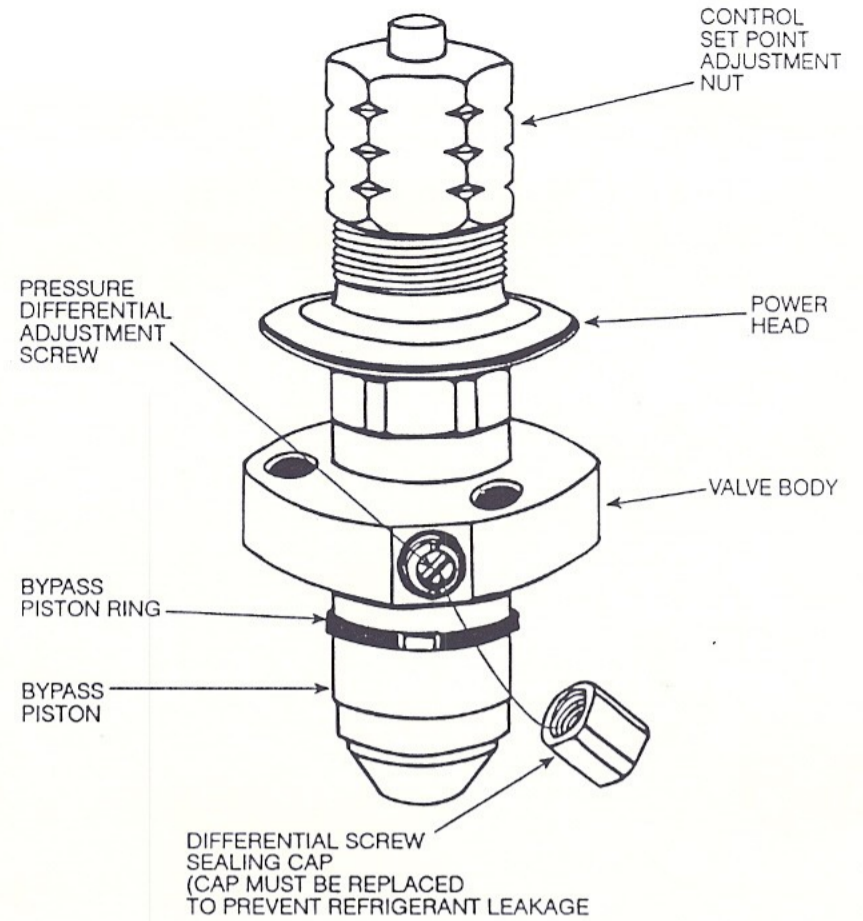
## THE QUESTION:

How do I adjust Carrier's pressure type capacity control valve?

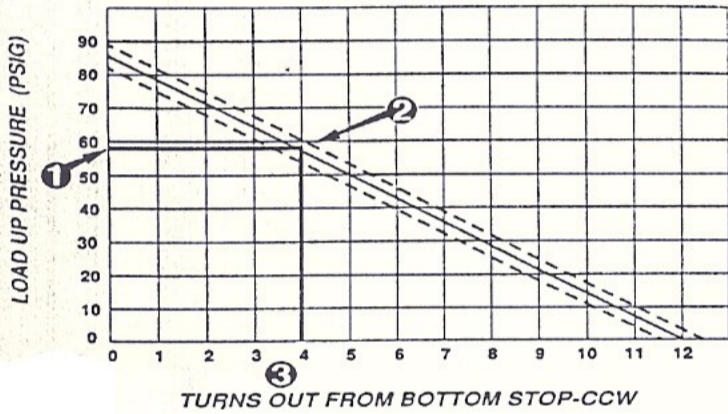
## THE ANSWER:

To adjust at what pressure the machine loads turn the control setpoint adjustment nut down to its bottom stop, it is now set to load at 86 psi. Find your desired set point on the chart and make the corresponding number of turns CCW.

For your differential setting turn the adjustment screw out to its backstop. In this position, the differential is 7.4 psi for cylinder bypass and 6.3 for suction cutoff. Use your differential chart the same way you used your setpoint chart to set it where you desire your differential. When making this adjustment keep in mind that the curve for suction cutoff is slightly lower than the bypass curve.



### CONTROL SET POINT



← LOADING POINT

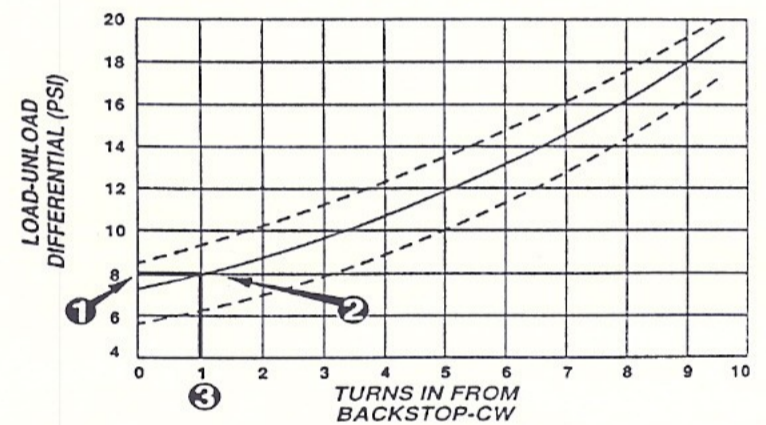
MINUS

DIFFERENTIAL

EQUALS

UNLOADING POINT

### BYPASS DIFFERENTIAL



#### CHOOSE YOUR DESIRED SETPOINT - 1

DRAW A LINE FROM YOUR CHOSEN SET POINT TO THE SOLID LINE CURVE AT THE INTERSECTION POINT - 2

DRAW A VERTICAL LINE TO THE BOTTOM OF THE GRAPH. 3 - THIS IS THE NUMBER OF COUNTER CLOCKWISE TURNS REQUIRED TO OBTAIN DESIRED SET POINT.

#### CHOOSE YOUR DESIRED DIFFERENTIAL - 1

DRAW A LINE FROM YOUR CHOSEN DIFFERENTIAL TO THE SOLID LINE CURVE AT THIS INTERSECTION POINT - 2

DRAW A VERTICAL LINE TO THE BOTTOM OF THE GRAPH. 3 - THIS IS THE NUMBER OF COUNTER CLOCKWISE TURNS FROM THE BACKSTOP, TO OBTAIN DESIRED DIFFERENTIAL.

### CAPACITY CONTROL ADJUSTMENT (PRESSURE TYPE):

Control Set Point (cylinder load point) is adjustable from 0 PSIG to 85 PSIG. Pressure differential between cylinder load-up point and cylinder unload point is adjustable from 6 PSI to 22 PSI.

To regulate Control Set Point (refer to Fig. 6): Turn adjustment nut clockwise to its bottom stop. In this position, set point is 85 PSIG. Control set point is then regulated to desired pressure by turning adjustment nut counterclockwise. Each full turn decreases set point by 7.5 PSIG. Approximately 11-1/2 turns counterclockwise will decrease set point to 0 PSIG.

Pressure Differential Adjustment (Fig. 6): Turn differential adjusting screw counterclockwise to its back-stop position. In this position, differential is 6 PSI. Pressure differential is set by turning adjustment screw clockwise. Each full turn increases differential by 1.5 PSI. Approximately 10 turns clockwise will increase pressure differential to 22 PSI.

### CAPACITY CONTROL VALVE OPERATION:

Capacity Control Valves are of the snap-action type. They are controlled by suction pressure and actuated by discharge pressure. Electrically actuated solenoid unloaders are available as an accessory. Each valve controls 2 cylinders. On start-up, controlled cylinders do not load up until differential between suction and discharge pressure is 19 PSIG.

Do not use automatic pumpdown control on 06E units equipped with unloader valves. Use single pumpout for solenoid drop (minimum protection) control.

### HOT GAS BYPASS UNLOADER OPERATION (Fig. 7):

Loaded Operation\* - Capacity control valve is activated by suction pressure. Suction pressure trip point is set by control set point adjusting nut. This nut controls tension of control set point spring which, when varied, sets point at which suction pressure overcomes spring, thus determining loading point.

When suction pressure rises high enough to overpower control set point spring, spring compresses and moves away from poppet valve. This action leaves free space at left of poppet valve. Poppet valve has two springs: a centering spring and a drive spring. With no restriction at left of popped valve, drive spring can overcome centering spring, causing poppet valve to move left and close.

With poppet valve closed, discharge gas from manifold cannot vent into suction side and thus builds up forcing bypass piston to the right and closed. Pressure then builds up on top of discharge valve, forcing check valve open which vents discharge gas to discharge manifold.

Unloaded Operation - As suction pressure drops below set point, control set point spring expands and moves to right. This action forces poppet valve open and allows discharge gas to vent to suction side. Absence of discharge pressure allows internal springs in bypass piston to move it back to left which unloads cylinder head.

\*When electric solenoid unloader is energized, the compressor cylinder bank unloads; when solenoid unloader is de-energized, the cylinder bank loads up.

#### \*SUCTION CUT-OFF UNLOADER OPERATION (figure 8):

Loaded Operation\* - Capacity control valve is activated by suction pressure. Suction pressure trip point is set by control set point adjusting nut. This nut controls tension of control set point spring which, when varied, sets point at which suction pressure overcomes spring, thus determining loading point.

When suction pressure rises high enough to overpower control set point spring, spring compresses and moves away from poppet valve. This action leaves free space at left of poppet valve. Poppet valve has two springs: a centering spring and a drive spring. With no restriction at left of poppet valve, drive spring can overcome centering spring, causing poppet valve to move left and close.

With poppet valve closed, discharge gas from manifold cannot vent into suction side, builds pressure back of the unloader piston and forces the valve body to the right. This opens the suction port allowing the bank of two cylinders to operate fully loaded.

Unloaded Operation - As suction pressure drops below the set point, the control set point spring expands and moves to the right. This action forces the poppet valve open and allows discharge gas to vent to suction side. Absence of discharge pressure on the unloader piston allows the valve spring to move the valve body to closed position blocking the suction port which unloads the cylinder head.

\*When electric solenoid unloader is energized, the compressor cylinder bank unloads; when solenoid unloader is de-energized, the cylinder bank loads up.

#### REMOVING, INSPECTING AND REPLACING COMPONENTS:

For instructions regarding inspection of lubricating system, replacing major components such as valve plates, bearings, pistons, rings, etc. consult your distributor for instruction sheets.