AIR DRYER — KS-16523, LIST 1

1. GENERAL

1.001 This addendum supplements Section A401.930/H51.332, Issue 1.

1.002 This addendum is issued to revise the requirements covering lubrication, operation of the air compressor unloader and water ejector; to add caution on draining the tank after checking the water ejector operation on air dryers equipped with manual drain valves; to add a requirement and procedure covering cleaning of the humidity sensing element; to revise the list of tools and materials, the procedures covering lubrication, the operation of air compressor unloader and the water ejector, the information on the intervals for checking requirements, and on the humidity alarm.

2. REQUIREMENTS

The following changes apply to Part 2 of the section.

(a) 2.04 — revised

(b) 2.10 — replaced by 2.10(a) and (b)

(c) 2.11 and 2.12 — heading revised

(d) 2.08(c) and 2.14 — added

2.04 ***Changing Oil in Crankcase of Air Compressor:*** The oil in the crankcase shall be changed after the first month of operation and thereafter at 3-month intervals. After removing the oil, the crankcase shall be flushed and then refilled with fresh KS-16729, List 1 oil.

2.08 ***Operation of Compressor Unloader***

(c) The compressor unloader shall be cleaned at 6-month intervals.

2.10 ***Operation of Water Ejector***

(a) The water ejector shall operate to discharge condensate from the air dehydrating tank during operation and release of the air compressor unloader. This requirement shall be checked weekly.

Gauge by feel.

To check this requirement, place a finger at the water drain outlet. If a pipe is attached to the outlet, disconnect the pipe. Discharge of condensate and air through the water drain will be indicated by a short discharge whenever the compressor unloader operates and releases.

Caution: After checking this requirement on air dryers equipped with a manual drain valve adjacent to the water ejector, open the valve to remove any water remaining in the tank in order to avoid build up of water in the tank under certain conditions.

(b) The water ejector shall be cleaned at 6-month intervals.

2.11 ***Operation of Output Air Pressure Regulator:*** (also applies to KS-16648 Dual Pressure Kit, if provided — see 1.06)

2.12 ***Operation of High-Low Output Air Pressure Alarms:*** (applies also to KS-16648 Dual Pressure Kit, if provided — see 1.06)

2.14 ***Cleaning of Humidity Sensing Element***

(a) The sensing element shall be cleaned at 3-month intervals.

(b) The sensing element inside the shield shall be free from oil.

Gauge by eye.

3. ADJUSTING PROCEDURES

The following changes apply to Part 3 of the section.

(a) 3.001, 3.02(1), 3.04(3), 3.08(6)(7), and 3.10(2) — revised

(b) 3.14 — added

3.001 ***List of Additional Tools and Materials***

CODE OR SPEC. NO.	
TOOLS	**DESCRIPTION**
—	Combination Pliers
MATERIALS	
KS-16729, List 1	Oil

3.02 ***Lubrication of Air Compressor*** (Rq 2.02)

(1) Remove the plug and attached stick oil gauge from the filler hole in the crankcase. Add sufficient KS-16729, List 1 oil to bring the oil level in the crankcase to just below the top mark in the stick gauge. Remount the plug and gauge. Move the air compressor start-stop control to the ON position and observe the oil pressure gauge.

3.04 ***Changing Oil in Crankcase of Air Compressor*** (Rq 2.04)

(3) Flush the crankcase as follows. Put approximately three pints of fresh KS-16729, List 1 oil in the crankcase. Remount the filler plug. Operate the compressor for several minutes. Remove the oil as covered in (1). If an oil drain is provided, close the valve and disconnect the pipe extension. Refill the crankcase as covered in 3.02. The capacity of the crankcase is three pints.

3.08 ***Operation of Air Compressor Unloader*** (Rq 2.08)

(6) Place the unloader in a vise and referring to Fig. 4, loosen the pressure and differential adjustment screw locknuts and the air inlet cap with the R-2652 wrench. Remove the two adjustment screws, the spring, valve rod, and valve ball from one end of the unloader body and the air inlet cap, filter screens, and felt filter from the opposite end. Discard the felt filter and the 0-ring. Clean the other parts and the inside of the unloader body using a KS-14666 cloth moistened with KS-7860 petroleum spirits.

(7) Place a new 0-ring on the differential adjustment screw. Reassemble the unloader as shown in Fig. 4 using a new felt filter. Remount the unloader and reconnect the tubing.

3.10 ***Operation of Water Ejector*** (Rq 2.10)

(2) Place the ejector in a vise, and referring to Fig. 5, remove the cap with the R-2512 wrench. Remove the seat shell, spring, and screen from the cap, and the seat insert and piston from the body. Remove and discard the 0-rings on the seat insert and the piston. Remove the valve seat disc screws from the seat shell and the piston using the combination pliers. Remove and discard the valve seat discs. Clean the valve parts and the inside of the cap and the body with a KS-14666 cloth moistened with KS-7860 petroleum spirits. Clean the screen by washing it in KS-7860 petroleum spirits. Wipe the parts with a dry KS-14666 cloth. Mount new 0-rings and valve seat discs and reassemble the ejector as shown in Fig. 5 and mount it in the air dryer. Reconnect the tubing.

3.14 ***Cleaning of Humidity Sensing Element*** (Rq 2.14)

(1) Before removing the sensing element, remove the office alarm circuit connector from the alarm plug on the top rear of the cabinet to prevent operation of the office alarm. Shut off the air supply to the cable system. Loosen the locknut on the output air pressure regulator using the R-1542 wrench. Shut off the regulator by turning the handwheel a few turns counterclockwise.

(2) Remove the sensing element cable retaining nut from the end of the manifold containing the element using the spanner wrench if it is a ring nut and the R-2652 wrench if it is a hex nut. Remove the element from the manifold by pulling gently on the cable taking care not to lose the 0-ring behind the retaining ring molded on the cable.

Caution: Avoid excessive flexing of the cable since this might damage the leads. Extreme care should be taken in removing and han-

dling the sensing element. Do not use an ohmmeter to measure the resistance of the sensing element or in any manner apply a dc voltage to the element as this will damage it.

(3) Clean the outer surfaces of the sensing element shield by wiping with a clean KS-14666 cloth. Make sure that oil or other foreign material is removed. Also wipe the inside of the manifold with a clean cloth, successively using different sections of the cloth, until the cloth indicates that the inner surfaces of the manifold are clean and free from oil.

(4) Observe the condition of the sensing element by looking through the holes in the shield. If there is any indication of oil on the element, replace the element.

(5) Before mounting the sensing element in the manifold, check for operation of the humidity alarm as covered in 4.05.

4. GENERAL INFORMATION

The following changes apply to Part 4 of the section.

(a) 4.03, 4.04 and 4.05 — revised

4.03 ***Intervals for Checking Requirements:*** Checking intervals are specified in connection with requirements 2.02, 2.04, 2.05, 2.08(c), 2.10, and 2.14 covering lubrication and changing oil of the air compressor, replacement of the air inlet filter felt, operation of air compressor unloader, operation of the water ejector and cleaning of humidity sensing element. Questions may arise regarding suitable intervals for checking other requirements in setting up maintenance programs for the air dryer. These intervals may vary with local conditions and practices and have not been specified in connection with the requirements. However, the following list of suggested checking intervals may serve as an aid in formulating maintenance programs.

REQUIREMENT		SUGGESTED CHECKING INTERVAL
2.01	(Cleaning)	See Note
2.06	(Tension of Drive Belts)	Weekly
2.07	(Safety Valve)	3 Months
2.08 (a) (b)	(Air Compressor Unloader)	Weekly
2.09	(Air Compressor)	Weekly
2.11	(Output Air Pressure Regulator)	Weekly
2.12	(Output Air Pressure Alarm)	3 Months
2.13	(Refrigeration System)	Weekly

Note: In order to maintain proper operation of the refrigeration system, the fins and tubing of the refrigerant condensing coil and the blades of the fan should be inspected frequently and cleaned when necessary.

Humidity Alarm

4.04 ***Alarm Setting:***

(a) Fig. 7 is a schematic of the alarm and shows the adjustable resistor used to set the alarm to the proper control point by turning a slotted shaft inside the alarm housing. On air dryers W.E. Serial No. 206 and higher, the resistor shaft is locked in this position by the manufacturer by means of a threaded sleeve on the shaft. On earlier air dryers the locking sleeve was not provided and the shaft is positioned as described in (b). The set plug furnished with these air dryers is not required and may be discarded. The alarm is set in the following manner with the air dryer delivering air to the cable system and with the dehydrating tank temperature about 40F.

(b) To set the alarm remove the office alarm circuit connector from the alarm plug on the top rear of the cabinet and connect the 81A test set to the plug to indicate closure of the alarm contacts. Remove the alarm cover using the Stanley screwdriver and turn the slotted shaft counterclockwise to the stop. Turn the shaft slowly clockwise until the test set buzzer operates, then counterclockwise just sufficiently to cut out the buzzer.

4.05 ***Operating Check***

(a) The alarm should operate if the relative humidity of the air passing through the manifold exceeds about 5 per cent at 70F. Although it is impracticable to test the sensitivity of the alarm in the field, a rough operating check can be made as described in (b). This check should be made with the sensing element removed from the manifold after cleaning the element as covered in requirement 2.14.

(b) With the office alarm circuit connector removed from the alarm plug, remove the humidity alarm cover using the Stanley screwdriver. Then, using the 3-inch cabinet screwdriver, disconnect the lead to the air pressure alarm from terminal 1 taking care not to remove the lead to the alarm plug. With the air compressor start-stop control in the ON position, connect the 81A test set to the alarm plug. Operation of the buzzer indicates operation of the alarm. If the buzzer does not operate, breathe on the sensing element. If the buzzer still does not operate, make sure that the cable from the sensing element is securely plugged into the receptacle in the alarm case. Examine the cable for a broken conductor and replace the cable, if necessary. If the cable is satisfactory, replace the sensing element.

(c) Mount the sensing element in the manifold and open the air line to the cable system. Adjust the output air pressure regulator to meet requirement 2.11, Reconnect the air pressure alarm lead to terminal 1 on the humidity alarm and mount the cover. When the buzzer stops, remove the test set from the alarm plug and connect the office alarm circuit.