TABLE 1. TEMPERATURES AND HUMIDITIES APPLICABLE TO INDUSTRIAL AIR CONDITIONING—(Continued)

PROCESS	TEMP. F	R.H. %
PRECISION MACHINING (Continued)		
Accurate gaging & inspection	75	45–50
Precision gage manufacture & adjustment	68–75	45–50
Precision gear drive assembly	72	42–50
Watch main spring calibration	76	45
Gage room	78	50
Precision parts—honing	75–80	35–45

For general manufacturing and assembly areas no attempt is made to control conditions during hot weather. An ample supply of outside air and air motion are relied upon to provide personal comfort.

Low relative humidity is usually maintained to prevent corrosion.

Temperature control within a narrow range is more important than temperature maintained.

Dust control is required wherever polishing operations occur.

Air distribution is important to maintain constant conditions throughout the area.

PROCESS	TEMP. F	R.H. %
PRINTING		
Pressroom:		
Multicolor offset lithography	75–80	46–48
Other sheet fed printing	75–80	45–50
Newspaper & other web printing	75–80	50–55
Stock room:		
Multicolor offset lithography	73–80	[a] 5–8% above pressroom
Other paper storage	70–80	[b]
Binding, cutting, drying, folding and gluing	70–80	45–50
Roll storage	73–80	50

[a] 5 to 8% above pressroom
[b] same as pressroom

Lithography requires constant humidity control of entire pressroom with paper conditioned 5 to 8 percent higher relative humidity at start. All printing requires conditioned paper otherwise it will not lie flat, with 40 to 45 percent R.H. low limit to eliminate static electricity; and 60 percent R.H. high limit to prevent swelling of the rolls and slow ink drying. Temperature is not critical, but extremes should be avoided due to softening of the rolls at high temperature and improper ink distribution at low temperatures.

Hoods must be provided for gas dryers, with solvent recovery recommended for all except job shops. Exhaust system with dust collectors incorporated is required for type and plate cleaning areas. Check use of gasoline and other solvents.

Summer—winter central systems are recommended for all except job shops where unitary equipment with heating coils and humidifiers may be used. Normal air cleaning is adequate. Air distribution must prevent drafts on paper in storage or process. Gas flame dryers impose unusual loads.

Air from press and storage rooms should not be recirculated through office areas.

PROCESS	TEMP. F	R.H. %
REFRIGERATION EQUIPMENT		
Valve Manufacturing	75	40
Compressor Assembly	70 to 76	30 to 45
Refrigerator Assembly	75	30 to 50
Testing	65 to 82	47

PROCESS	TEMP. F	R.H. %
RUBBER DIPPED GOODS		
Manufacture	90	
Cementing	80	25–30
Dipping surgical articles	75–90	25–30
Storage prior to manufacture	60–75	40–50
Laboratory (*ASTM* Standard)	73.4	50

Solvents used in manufacturing processes are usually explosive and toxic, requiring positive ventilation.

Volume manufacturers usually install a solvent recovery system.

TABLE 1. TEMPERATURES AND HUMIDITIES APPLICABLE TO INDUSTRIAL AIR CONDITIONING—(Continued)

PROCESS	TEMP. F	R.H. %
TEXTILES		
Cotton: Opening	70–75	55–60
Picking	75	55–60
Carding, Winter	75–80	55
Carding, Summer	83	90
Carding, Summer, or	85	80
Carding, Summer, or	87	70
Drawing	80	60
Roving	80	60
Ring Spinning		
Conventional	80–85	70
Long Draft	80–85	55
Frame Spinning	80–85	55–60
Spooling & Warping	78–80	65
Weaving	78–80	70–85
Cloth Room	75	65–70
Combing	75	50–65
Linen: Carding	75–80	60
Spinning	75–80	60
Weaving	80	80
Woolens: Pickers	80–85	60
Carding	80–85	65–70
Spinning	80–85	50–60
Dressing	75–80	60
Weaving		
Light goods	80–85	60
Overcoating (32 oz.)	80–85	60–65
Drawing	75	50–60
Worsteds: Carding	80–85	65
Combing	80–85	65–70
Gilling	80–85	65–70
Top Storage	70–85	75–80
Drawing	80–85	65
Cap Spinning	80–85	50–55
Spooling & Winding	75	65–70
Weaving	80	55–70
Finishing	75	60
Silk: Preparatory	80	60–65
Weaving	80	60–70
Dressing	80	60–65
Spinning	80	65–70
Throwing	80	60
Rayon: Spinning	80–90	50–60
Throwing	80	55–60
Weaving		
Regenerated	80	50–65
Acetate	80	55–60
Spun rayon	80	80
Picking	75–80	50–60
Carding, roving, drawing	80–90	50–60
Knitting		
Viscose or cuprammonium	80–85	65
Acetate	80–85	60
Laboratory (*ASTM*)	70	65
Rayon synthetic fiber processing:		
Viscose		
Preparatory	80	60
Weaving	80	60
Celanese		
Preparatory	80	70
Weaving	80	70–75
Nylon		
Preparatory	80	50–60
Weaving	80	50–60

Cotton: Relative humidity maintained in ring spinning depends on staple, twist and whether leather aprons are used for conveying long draft stock. Aprons readily absorb moisture causing cotton to stick when relative humidity is above 55 percent.

With conventional 3 or 4 roll spinning, relative humidity may be as high as 70 percent dependent upon draft, twist and staple.

Relative humidity carried in cotton weaving depends upon construction of the cloth. When automatic machines are to be tended and the warps are heavily sized, it may be as high as 90 percent.

Woolen: In woolen spinning, the relative humidity maintained for mules is generally 55 percent, with conditions over frame spinning at 55 to 60 percent. Both types of spinning depend on the class of stock spun, also the regain in the roving.