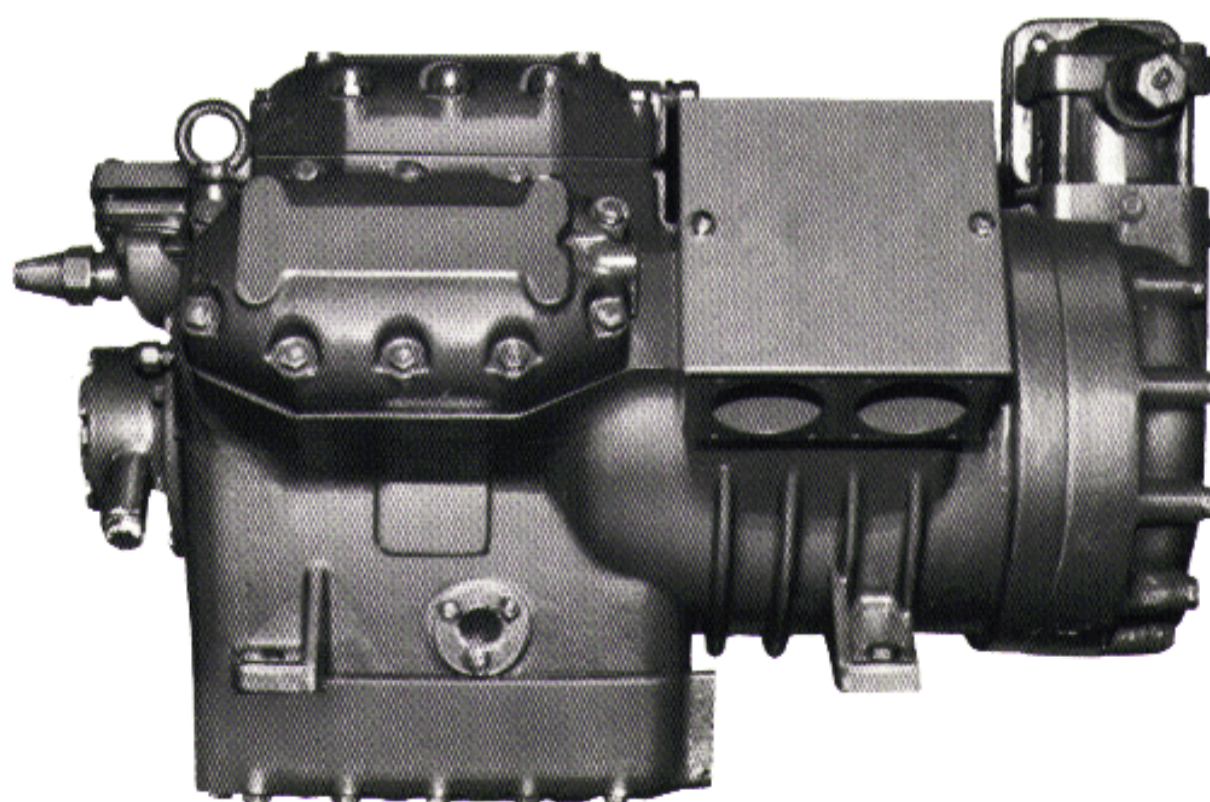


Service Manual

H 74 Compressors



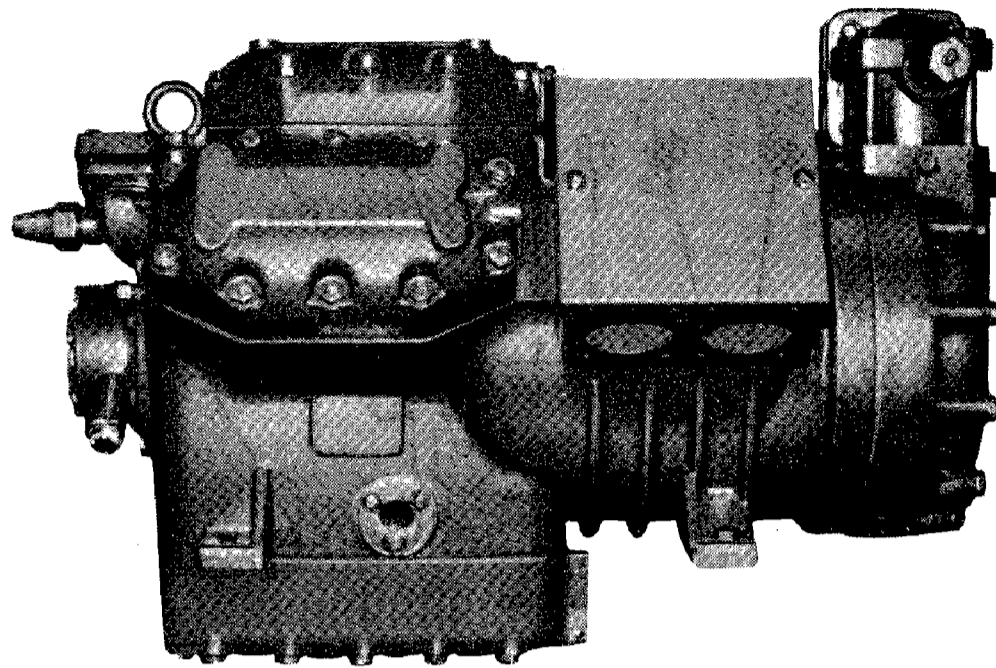
1. Specifications

	4H74FA	4H74MA	4H74TA	6H74FA	6H74MA	6H74TA	8H74JA	8H74QA	8H74WA
Cylinders	4			6			8		
Bore (mm)	74								
Stroke (mm)	45	52	60	45	52	60	52	60	68
Volume (cc)	773.8	894.1	1031.7	1160.6	1341.2	1547.5	1788.2	2063.4	2338.5
Arrangement	90° V Type			60° W Type			45° VV Type		
Speed (rpm)	1450/1750								
*1 Displacement (m ³ /H)	67.32/81.24	77.79/93.88	89.76/108.33	100.98/121.87	116.68/140.82	134.63/162.49	155.58/187.77	179.51/216.65	203.45/245.54
Motor	4 pole, 3 phase, induction motor								
Rated output (kW)	15	19	22	22	26	30	30	37	45
Capacity control (%)	100, 50			100, 66, 33			100, 75, 50, 25		
Refrigerant	R 22 (R 12, R 502)								
Refrigeration oil	SUNISO 3 GSD								
Charge (ℓ)	5			8			8		
Lubrication method	Forced lubrication by trochoid pump (Reversible)								
Discharge pipe connection (mm)	φ 31.8 Copper tube			φ 38.1 Copper tube			φ 44.5 Copper tube		
Suction pipe connection (mm)	φ 44.5 Copper tube			φ 50.8 Copper tube			φ 63.5 Copper tube		
Weight (kg)	195	200	205	232	237	245	330	340	350

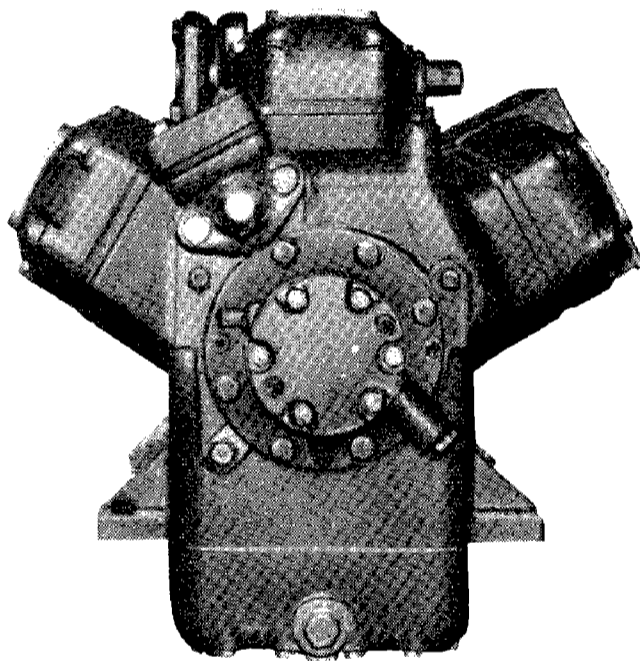
*1 Displacement (m³/H)=Cylinder volume (cc)×Speed (rpm) ×60×10⁻⁶

2. External views

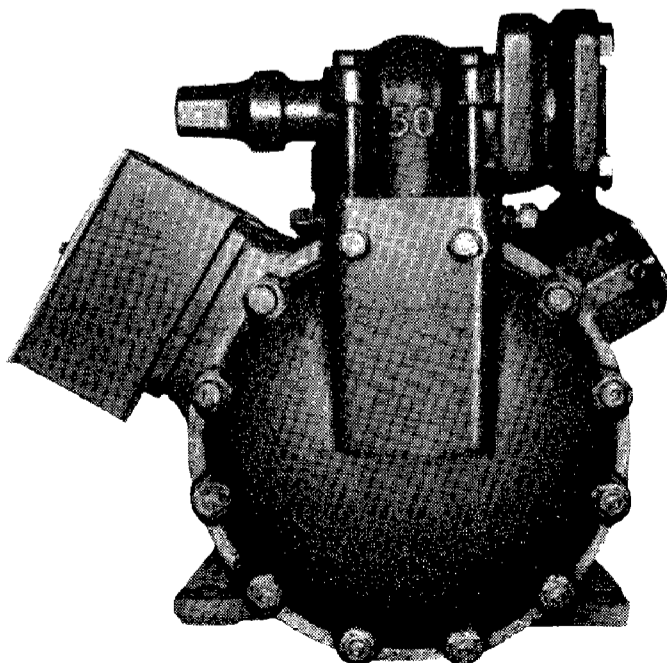
Front



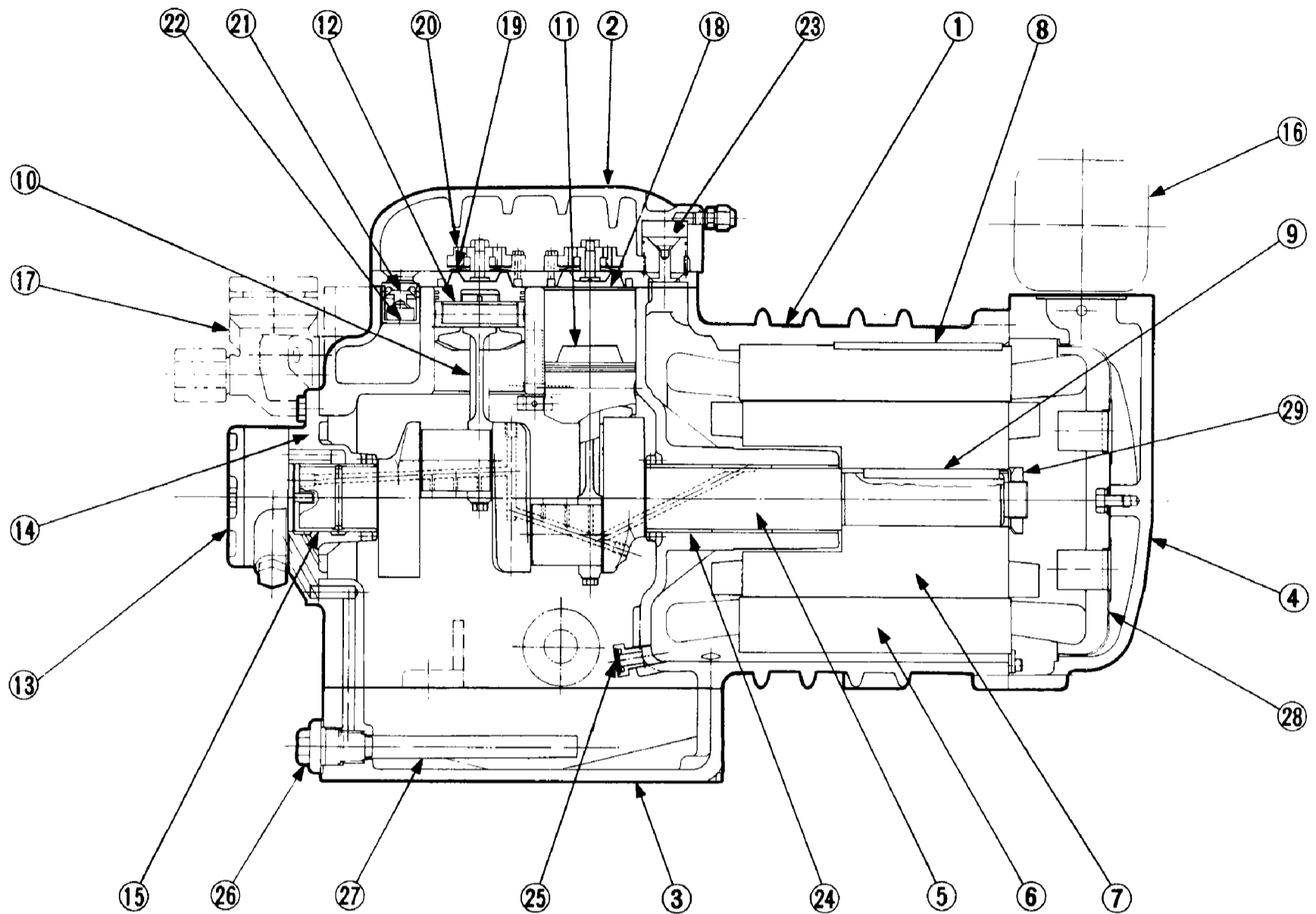
Pump side



Motor side



3. Sectional view

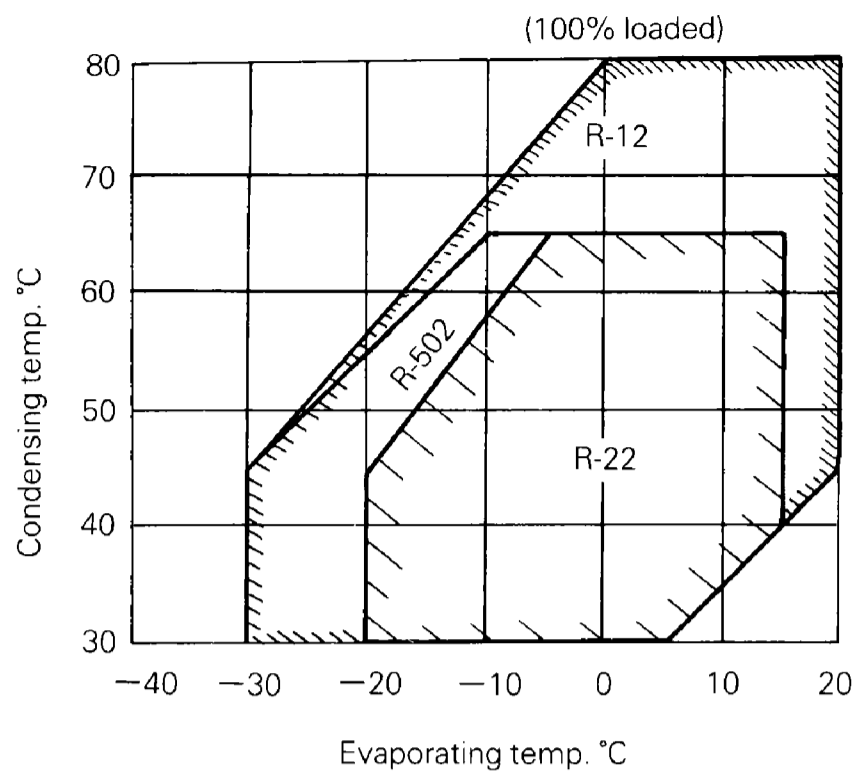


- ① Frame
- ② Cylinder head cover
- ③ Bottom cover
- ④ Side cover
- ⑤ Crankshaft
- ⑥ Stator
- ⑦ Rotor
- ⑧ Stator key
- ⑨ Rotor key
- ⑩ Connecting rod

- ⑪ Piston
- ⑫ Piston pin
- ⑬ Oil pump assembly
- ⑭ Bearing on oil pump side
- ⑮ Bearing metal on oil pump side
- ⑯ Suction stop valve
- ⑰ Discharge stop valve
- ⑱ Suction valve plate
- ⑲ Discharge valve plate
- ⑳ Discharge valve gland

- ㉑ Check valve
- ㉒ Check valve cylinder
- ㉓ Unloader piston
- ㉔ Bearing metal on motor side
- ㉕ Oil check valve
- ㉖ Oil drain plug
- ㉗ Oil suction filter
- ㉘ Suction filter
- ㉙ Crankshaft lock nut

4. Operating limits



NOTES:

- (1) Ambient temperature: $-10\sim 55^{\circ}\text{C}$
- (2) Inclination: $\leq \pm 10^{\circ}$
- (3) ON-OFF operation: ≤ 6 times/hr.
- (4) ON-OFF frequency: $\leq 100,000$ times

Conditions: (R-22)

Discharge gas temperature: Max. 130°C
Oil temperature: Max. 80°C
Suction super heat: Max. 5°C

Conditions: (R-12)

Discharge gas temperature: Max. 120°C
Oil temperature: Max. 80°C
Suction super heat: Max. 5°C

Conditions: (R-502)

Discharge gas temperature: Max. 130°C
Oil temperature: Max. 80°C
Suction super heat: Max. 5°C

5. Unloader mechanism

The unloader mechanism bypasses gas discharged from the specified cylinder to the low pressure side by means of a solenoid valve. Fig. 1 shows the loaded state of the mechanism; i.e. when a pressure difference of over 3kg/cm^2 acts on the pilot chamber (A) of the unloader piston assembly. The unloader piston overcomes the thrust of the unloader piston spring and blocks the bypass port, so gas is discharged to the high pressure side.

Fig. 2 shows the unloaded state (including stopping state); i.e. the thrust of the unloader piston spring opens the bypass port by pushing the unloader piston assembly into the pilot chamber (A), so discharge gas bypasses to the low pressure side. The check valve prevents high pressure gas from other loaded cylinders from flowing back into the cylinder head cover. Change-over from high to low pressure and vice versa is performed by a 3-way solenoid valve. One valve is required per pair of cylinders.

