

**Dagangan** : COMPRESSOR FOR  
REFRIGERATION EQUIPMENT

Nama Perdagangan : Reciprocating Compressor  
Jenama : Vilter  
Model : VMC 356ES

**Kod Tarif (Perintah Duti Kastam 2012) :**

8414.30.40 00 (PDK 2017)

**Tarikh Kelulusan** : 24 Mei 2017

**Keterangan barangan :**

Berdasarkan maklumat yang dikemukakan, barangan adalah *reciprocating compressor* model VMC 356ES, jenama Vilter. *Compressor* ini dilengkapi dengan komponen utama seperti *multi cylinder, crankshaft, piston and connecting rod, suction connection, discharge connection*.

Gambar barangan adalah seperti berikut :



Berdasarkan katalog yang dikemukakan, barangan adalah *heavy duty, reciprocating multi-cylinder open type* di mana *pistons* adalah daripada jenis *aluminium with rifle drilled aluminium connection* dengan *valve yang non-flexing*. *The compressor shall have forced feed, self-aligning positive displacement type*.

Berdasarkan kepada katalog yang dikemukakan oleh pihak syarikat, spesifikasi bagi barangan ini adalah seperti berikut:

|    |   |  |
|----|---|--|
| 1. | <i>Model</i>  | VMC 356ES  |
| 2. | <i>Type</i>   | <i>Open Type Industrial Reciprocating Compressor</i> |
| 3  | <i>Item Specification</i>   |  |
|    | <i>Number of cylinder</i>   | 6  |
|    | <i>Maximum RPM</i>  | 1800   |
|    | <i>Bore &amp; Stroke – In (mm)</i>  | 3 ¾ x 3 ½<br>( 95 x 89)                              |
|    | <i>Tons(Kcal/hr x 10<sup>3</sup>)<br/>Refrigeration @ 95°F<br/>Condensing</i> | R-22(20°F)<br>73 (221)                               |
|    | <i>Suction Connection – In.(mm)</i>   | 3 5/8 (92)   |
|    | <i>Discharge Connection – In.(mm)</i>   | 2 5/8 (67)   |
|    | <i>Unit Weight Less motor – Lbs.(kg)</i>                                      | 1600 (726)   |
|    | <i>Oil Charge - Gallon (liters)</i>   | 3 ½ (13)   |
|    | <i>Standard Steps of Unloading (%)</i>  | 33/66  |
|    | <i>Optional Steps of Unloading (%)</i>  | 17/33/50/66  |
|    | <i>Maximum Discharge Temp. - °F (°C)</i>                                      | 300 (149)  |
|    | <i>Crankcase Oil Temp.Range – °F (°C)</i>                                     | 100-150<br>(68-66)                                   |

Berdasarkan ciri dan spesifikasinya, barangan ini menepati sebagai *reciprocating compressor* iaitu sejenis *positive displacement compressor* yang menggunakan *piston driven by crankshaft*.

Kegunaan *reciprocating compressor* ini adalah untuk *compress gas from low pressure to high pressure gas*. Ia boleh digunakan sebagai *compressor* bagi *refrigeration duties* dan untuk *industrial air condition system* bagi bangunan.

### **Ketetapan**

Ketua Pengarah Kastam Malaysia memutuskan barangan ini sesuai diperjeniskan di bawah kod tariff **8414.30.40 00** sebagai ***compressors of a kind used in refrigerating equipment, with a refrigeration capacity exceeding 21.10 kW*** berdasarkan alasan-alasan seperti berikut :

- (i) Barangan ini adalah sejenis *open type reciprocating compressor* yang menggunakan *piston driven by a crankshaft*. Barangan ini digunakan di dalam *refrigeration industries* dan *industrial air condition system* bagi bangunan.
- (ii) Fungsi utama barangan adalah *to take in the low pressure refrigerant vapor from the suction side of the compressor and compress the refrigerant into the high pressure and discharge it to the discharge side of the compressor*.
- (iii) Berdasarkan kepada spesifikasinya, barangan mempunyai *unit power* dalam *Kcal/hr x 10<sup>3</sup>*, manakala unit dalam Perintah Duti Kastam 2017 adalah dalam *kWatt*. Sehubungan itu, pengiraan bagi menukar unit *Kcal/hr x 10<sup>3</sup>* kepada *kWatt* menggunakan lamanweb <https://www.unitjuggler.com/convert-energy-from-kcal-to-kWh.html> dibuat bagi memastikan barangan diperjeniskan di bawah kod tarif yang tepat (sila rujuk kand. 7) seperti Jadual di bawah.

| No | Item/Model                         | 356ES                                      |
|----|------------------------------------|--|
| 1. | Number of cylinder                 | 6  |
| 2. | Maximum RPM                        | 1800                                       |
| 3. | Oil Charge - Gallon (liters)       | 3 ½ (13)                                   |
| 4. | Standard Steps of Unloading (%)    | 33/66                                      |
| 5. | Maximum Discharge Temp. - °F (°C)  | 300 (149)                                  |
| 6. | Crankcase Oil Temp.Range – °F (°C) | 100-150<br>(68-66)                         |
| 7. | Capacity                           | 221000<br>Kcal/hr<br>(257.023<br>kWatt/hr) |

Merujuk kepada Jadual di atas, adalah didapati model 356ES mempunyai *refrigeration capacity exceeding 21.10 kW*

- (iv) Memandangkan jabatan masih belum menerima EN HS 2017 daripada WCO semasa laporan ini disediakan, maka rujukan dibuat berdasarkan EN HS 2012.
- (v) Barangan adalah sejenis *open type compressor* yang digunakan didalam *refrigeration industries*. Barangan mendapat liputan di bawah ***sub-heading 8414.30*** dalam EN HS 2012 muka surat XVI-8414-2 seperti berikut:

***84.14 - Air or vacuum pumps, air or other gas compressors and fans; ventilating or recycling hoods incorporating a fan, whether or not fitted with filters.***

8414.10 - Vacuum pumps

8414.20 - Hand or foot-operated air pumps

**8414.30 - Compressors of a kind used in refrigerating equipment**  
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*This heading covers machines and appliances, hand-operated or power driven, for the compression of air or other gases, or for creating a vacuum, and also machines for circulating air or other gases.*

**(A) PUMPS AND COMPRESSORS**

*In general, air pumps, vacuum pumps and compressors function on the same principles as and are broadly of similar construction to the liquid pumps (piston, rotary, centrifugal or ejector pumps) described under the preceding heading.*

*In addition, however, there are certain special types, particularly for producing high vacua, such as diffusion pumps (the pump fluid being oil or mercury), molecular pumps and entrapment pumps (getter pumps, cryopumps). Diffusion pumps, however, are sometimes made of glass, in which case they are excluded (Chapter 70).*

*Air and vacuum pumps serve many purposes: for facilitating boiling, distilling or evaporating at reduced pressure; for evacuating; electric lamps or tubes, vacuum flasks, etc. Air pumps serve for pumping air at pressure (e.g., for inflating pneumatic tyres).*

*Unlike liquid pumps, air or other gas compressors (other than low pressure or intermittent working compressors) are water-cooled or have fins or other means for air cooling (surface cooling) to dissipate the considerable heat of compression which is generated.*

*There are several types of compressors, for example, reciprocating piston, centrifugal, axial and rotary compressors. A special type of compressor is the exhaust-gas turbocharger used in internal-combustion piston engines to increase power output.*

*Compressors are widely used: for compressing gases into gas cylinders; in chemical processes; for refrigerators, etc. and for compressing air or other gases in reservoirs to be used to force feed machines or apparatus such as compressed air engines, pneumatic picks, winches, brakes, pneumatic conveyer tubes, submarine ballast tanks, etc.*

- (vi) Sehubungan itu kod tarif yang sesuai bagi barangan adalah **8414.30.40 00** mengikut struktur tarif dalam Perintah Duti Kastam 2017 adalah seperti berikut:

|                      |  |
|----------------------|--|
| <b>84.14</b>         | <b>- Air or vacuum pumps, air or other gas compressors and fans; ventilating or recycling hoods incorporating a fan, whether or not fitted with filters.</b> |
|                      | .....  |
| 8414.30              | - Compressors of a kind used in refrigerating equipment:   |
| <b>8414.30.40 00</b> | <b>- - With a refrigeration capacity exceeding 21.10 kW, or with a displacement per revolution of 220 cc or more</b>   |
| 8414.30.90 00        | - - Other  |
| 8414.40.00 00        | - Air compressors mounted on a wheeled chassis for towing  |

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