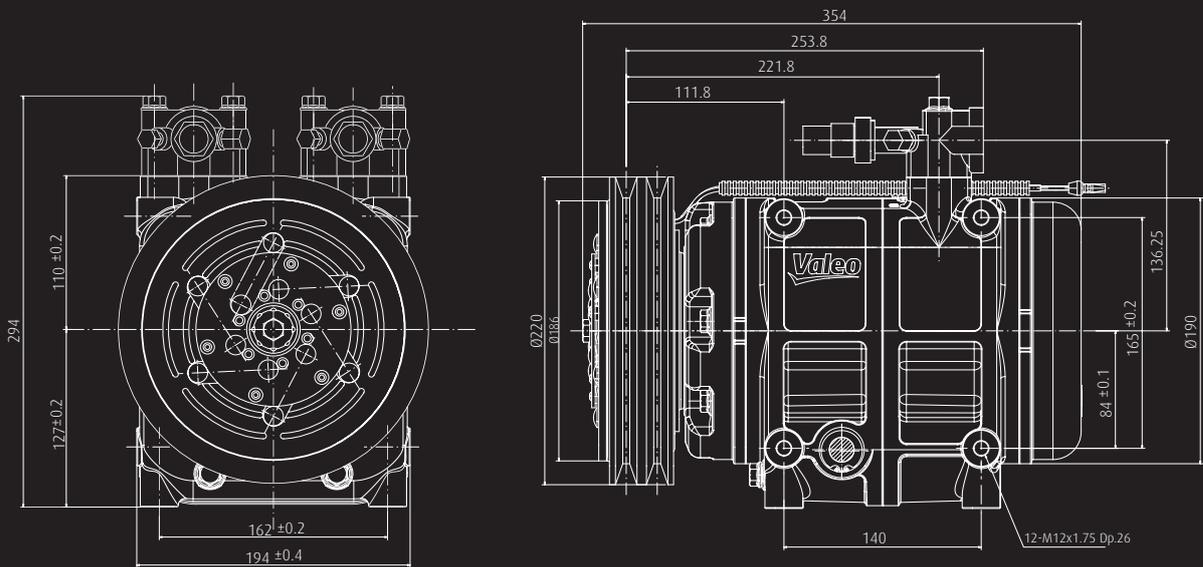


# Compressor for Bus Air Conditioning



## TM-65 Compressor The large displacement compressor by Valeo



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Enabling a better automotive world



# Innovative solution for Bus Air Conditioning

The new Valeo **TM-65** compressor is the great achievement of Valeo Compressors fifty years cutting-edge innovations and customer oriented product development. Customers have praised Valeo Compressors know-how, technologies and heavy-duty products which ideally suit buses applications.

Our expertise and engineering excellence are featured today in the new Valeo **TM-65**, which is released after a long and demanding validation program in our heavy-duty R&D center in Japan. The full qualification of this new product is issued after extensive and successful runs on current bus air conditioning system equipments in Asia and the Middle East, which host the hottest climates.

Valeo **TM-65** Heavy Duty compressor operation excellence is guaranteed today for large buses and coaches air conditioning systems.

Valeo **TM-65** delivers high cooling capacity along with compact size and light weight.

Running smoothly and quietly Valeo TM-65 reliability combined with excellent efficiency reduces significantly operating costs for companies running buses equipped with Valeo **TM-65** air conditioning compressor.

Valeo **TM-65** benefits make it the best solution for large bus air conditioning systems.

MODEL	<b>TM-65</b>
TECHNOLOGY	Heavy Duty Swash Plate
DISPLACEMENT	635cc / 38.75 in <sup>3</sup> per rev.
NUMBER OF CYLINDERS	14 (7 double-headed pistons)
REVOLUTION RANGE	600-4000 rpm
DIRECTION OF ROTATION	Clockwise viewed from clutch
LUBRICATIONSYSTEM	Lubrication by oil pump
REFRIGERANT	HFC-134a
OIL (QUANTITY)	PAG OIL (1500cc / 0.40 gal)
WEIGHT	18.1kg / 39.9lb (w/o Clutch)
DIMENSIONS Length - Width - Height	341 - 194 - 294 (mm) 13.4 - 7.64 - 9.33 (in)
MOUNTING	Direct (side or base)



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# Valeo **TM-65** benefits

## Valeo **TM-65** Benefits for Buses and Coaches Operators

Best Efficiency :	<ul style="list-style-type: none"><li>-Equivalent cooling with lower fuel consumption</li><li>-Save costs with TM-65 equipped Buses</li></ul>
Reliability & Durability :	<ul style="list-style-type: none"><li>-“Made in Japan” manufacturing quality standards</li><li>-Lip type shaft seal design ensuring oil leakage free operation</li><li>-Balanced design reducing noise and vibrations</li><li>-Improved durability ensures long-term cost savings</li></ul>
High Cooling Capacity :	<ul style="list-style-type: none"><li>-Best cooling capacity at idling (traffic jam, stops,...)</li><li>-Guarantees Passengers’ comfort</li></ul>

## Valeo **TM-65** Benefits for Bus Makers

Light weight & compact :	<ul style="list-style-type: none"><li>-Easy to mount &amp; to maintain (oil sight glass, no leakage)</li><li>-Improved field serviceability</li><li>-Most challenging integration made easier by design</li></ul>
Balanced 14 Cylinders design :	<ul style="list-style-type: none"><li>-Decreased constraints on each valve and pistons</li><li>-Less stress, metal fatigue, improved durability</li><li>-Robust design and high precision manufacturing</li><li>-Better reliability with less parts (up to -40% vs. competitors)</li></ul>
Performance-Cost Mix :	<ul style="list-style-type: none"><li>-Highly Competitive pricing for better performances</li></ul>

## Valeo **TM-65** Benefits for A/C Systems Makers

Perfect Compatibility :	<ul style="list-style-type: none"><li>-Great adaptability to any chassis, engines</li><li>-Natural integration to any A/C systems</li></ul>
Premium Quality product :	<ul style="list-style-type: none"><li>-Valeo design ensuring performance &amp; durability</li><li>-Japan design and manufacturing guaranteed origin</li></ul>
Valeo warranty and Competitive pricing :	<ul style="list-style-type: none"><li>-0 defect production quality &amp; skilled experienced staffs</li><li>-Warranty in line with customers standards</li><li>-Moderate pricing for innovation and quality</li></ul>

# Valeo TM-65 Compressor



Oil fill-up plug for better inner oil return

Lip type shaft seal providing ultimate reliability & performance

7 double-headed pistons architecture ensuring smooth and quiet operations

Compact & robust design enabling easy mounting configurations

Light & Compact, Ultimate Reliability, Highest Performance

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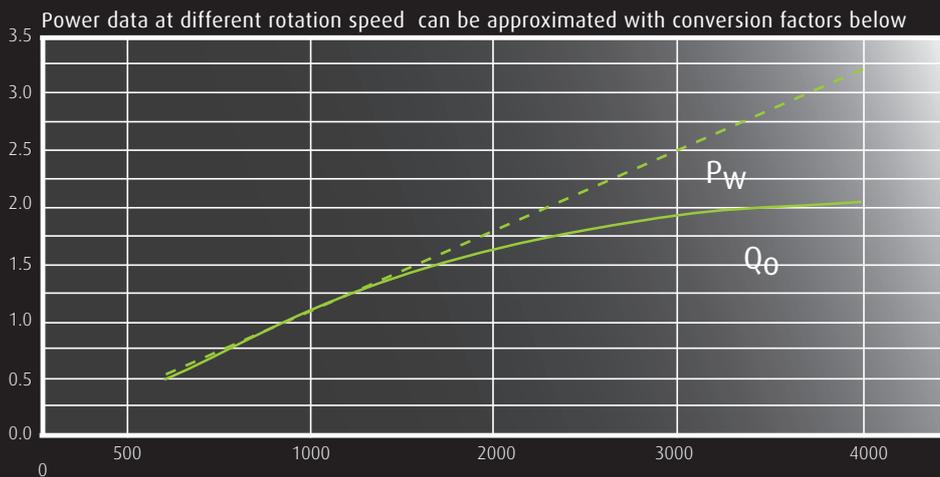
# Valeo TM-65 performance

## Valeo TM-65 Performance data (R134a)

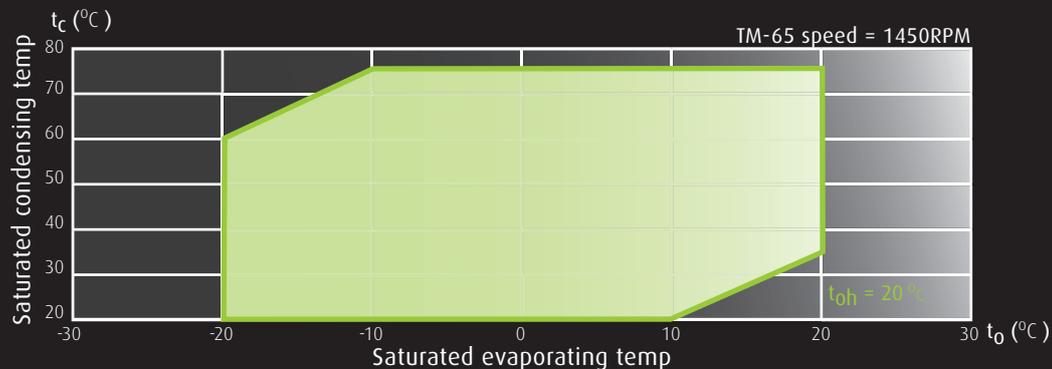
		Cooling capacity $Q_0$ (Watt) & Power consumption $P_W$ (Watt)						
Cond. temp (°C)	Conditions	Evap temp (°C)	10	7.5	5	0	-5	-10
$T_c$	$P_d$	$P_s$	0.32	0.28	0.24	0.19	0.15	0.10
40	0.91	$Q_0$	42,880	37,190	34,060	28,190	22,510	17,300
		$P_W$	7.70	7.48	7.29	7.08	6.50	5.80
50	1.21	$Q_0$	35,730	31,970	29,230	23,590	18,650	14,700
		$P_W$	8.82	8.46	8.28	7.60	6.81	6.05
60	1.58	$Q_0$	30,650	27,800	24,870	19,860	15,500	11,970
		$P_W$	9.78	9.42	8.94	8.02	7.01	6.07

Compressor speed=1450 RPM , suction gas temperature=20°C

## Valeo TM-65 Conversion factors

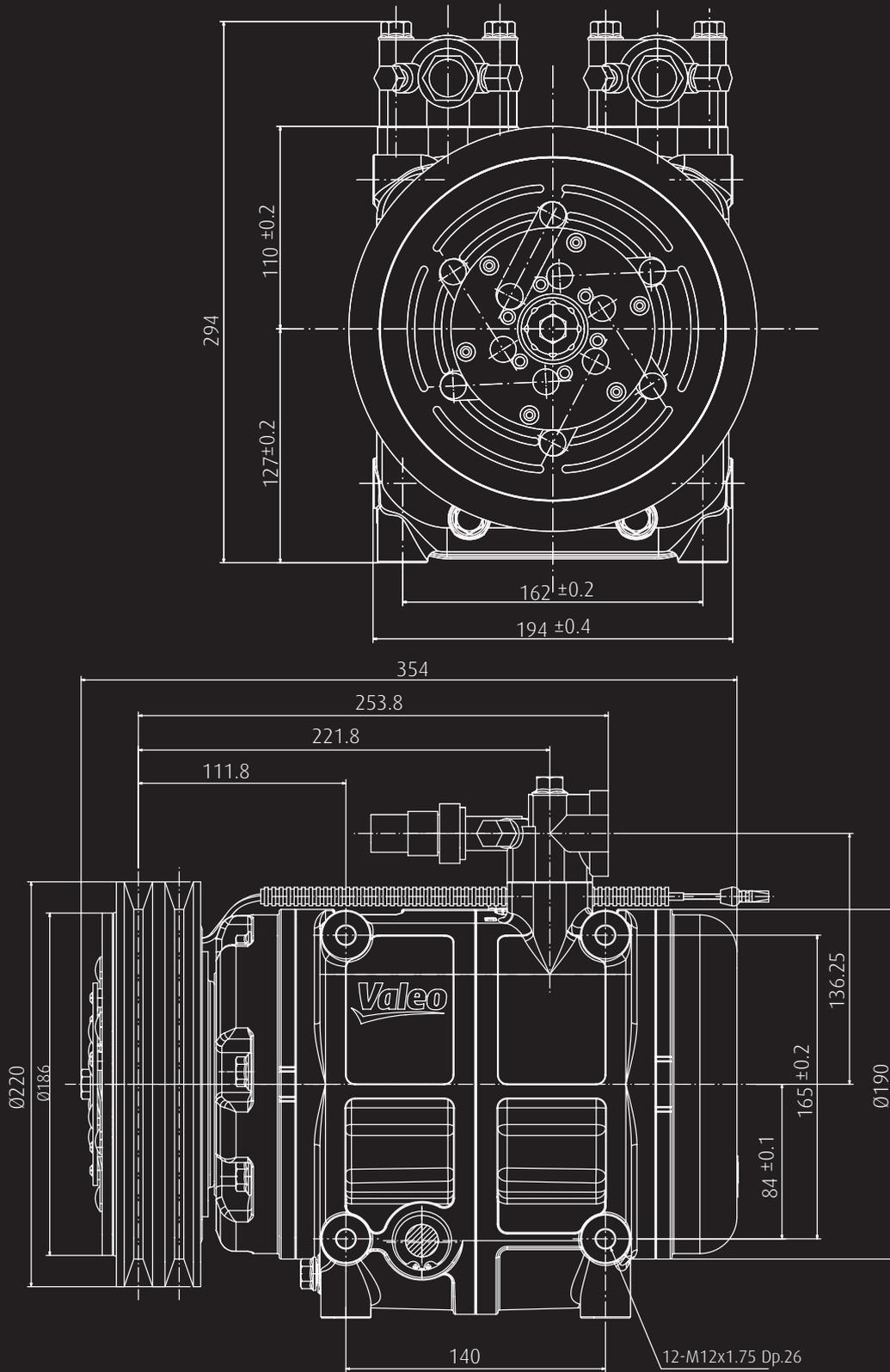


## Valeo TM-65 Application limits



- $t_c$  : Condensing temperature (°C)
- $t_o$  : Evaporating gas temperature (°C)
- $t_{oh}$  : Suction gas temperature (°C)

# Valeo TM-65 dimensions

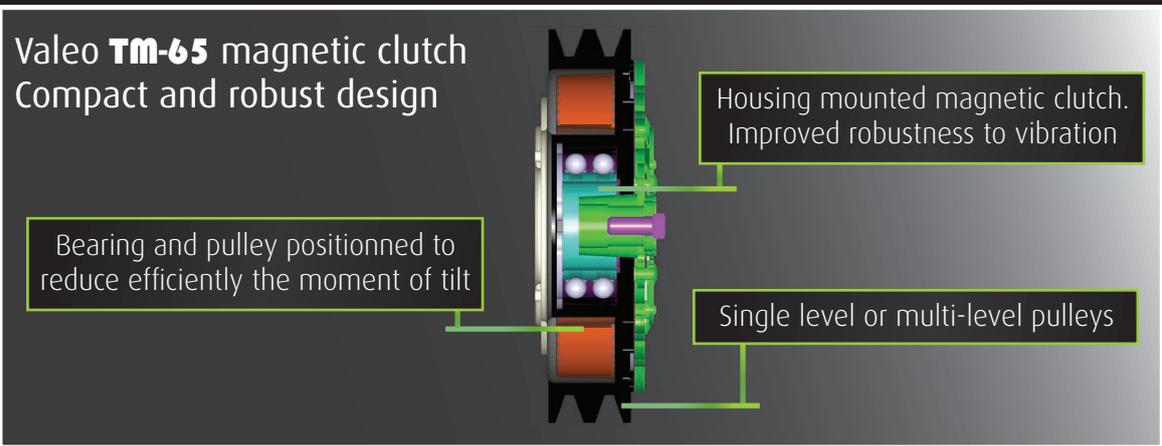


# TM-65 Magnetic Clutch

VALEO **TM-65** is available either as compressor and magnetic clutch assembly or compressor body that customers can fit with compatible magnetic clutches. The magnetic clutch design Valeo has been promoting for more than 20 years now is gradually adopted as well by other major market actors.

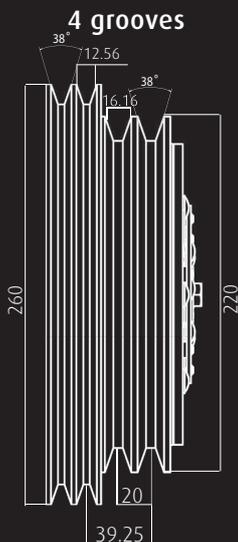
Our compressors and magnetic clutches have successfully passed thousand hours long validation tests in Valeo Compressors research center laboratory. Operational excellence was demonstrated during hot season testing on field under challenging climates in the most stressful conditions.

Being able to rely on our robust magnetic clutch provide the best way to reduce fuel consumption without using additional unloading device that decreases significantly compressor efficiency and durability. Valeo magnetic clutches range ensures an unmatched reliability and the longest durability that perfectly matches the Valeo **TM-65** compressor qualities.

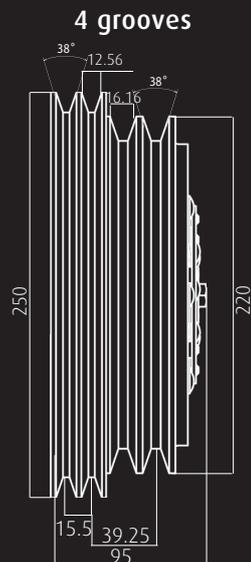


## Valeo **TM-65** magnetic clutches standard range:

**BW220 AW260**

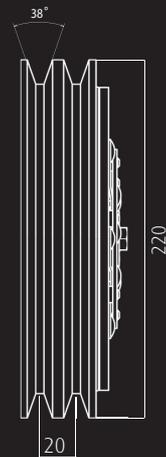


**BW220 AW250**

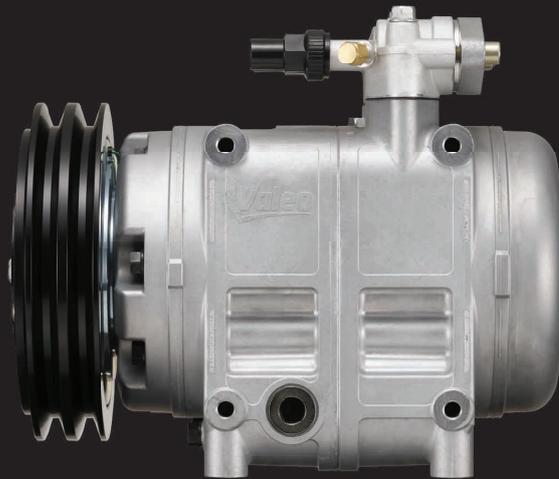


**BW220**

2 grooves



# New Valeo **TM-65** Compressor for Bus Air-Conditioning



## Valeo **TM-65** Benefits

- High reliability
- Integration flexibility
- Great cooling capacity
- Enhanced performance
- Lower fuel consumption
- Compact & robust design
- Improved field serviceability
- Reduced noise and vibrations
- Staggering value through innovation

valeo added 

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