

# Příloha 2 – Dmychadlo

## Zdroj

Získáno 24.07.2020 z HR Blowers UK Ltd:

<http://hrblowers.co.uk/wp-content/uploads/2018/05/RBTM-Truck-Blowers-68.-610-613pdf.pdf>

# HRBV/RBTM Truck Blowers HRBV68, 610, 613

Blower Range:  
450 - 2240 (M<sup>3</sup>/HR)

## Design Features

The conservative load carrying capacity of the larger diameter bearings ensures an extended operating life. Timing gear life is also extended by a controlled lubrication system. The computer calculated impeller profiles ensure maximum volumetric efficiency with minimum absorbed power without sacrificing torsional rigidity.

The high rigidity of the impeller and generous shaft diameter keeps stresses low. Gear and shaft strength is substantially increased by the use of slow taper mounted gears which do not need keyways for location. This also simplifies the setting of the gear wheels to obtain correct timing of the impellers, a feature that facilitates field maintenance. Precision ground and hardened steel gears are used to ensure smooth running and accurate timing of the rotating impellers.

Specially designed rotary oil seals are used in the gearcase. This feature eliminates maintenance associated with the use of lip seals.

This range can now be supplied with oil lubricant at the drive end as well as the gear end and thus helps to simplify maintenance. This feature is particularly attractive where the blower is used in high ambient temperature conditions.

Design and manufacture is in accordance with metric standards.

## Specification

**CASING:** The cylinder and headplates are manufactured from cast iron. The gearcase is manufactured from aluminium.

**IMPELLERS AND SHAFTS:** The impellers are made from SG iron, and cast with integral shafts. The shaft diameter of machines in the HRBV (RBTM) Blowers range is larger than that of earlier designs, enabling increased operating pressures to be achieved without increasing blower size.

**GEARS:** The precision ground and hardened steel spur gears are taper mounted onto the impeller shafts. The timing of the impellers relative to each other is accurately maintained at all times.

**BEARINGS:** The bearings are of generous proportions to give long operational life. Grease or Oil lubricated double row ball bearings are used at the drive end of the blower. In addition to their normal duty of carrying radial loads associated with the differential air pressure on the rotating impellers, the ball bearings provide axial location of the impellers. Parallel roller bearings at the gear end are splash lubricated by oil from the gears.

**LUBRICATION:** Our design of controlled gear wheel lubrication enables the gears to operate at a high pitch line velocity without the need for an oil pump. Simple, maintenance free oil throwers fitted behind each bearing in the gearcase prevent leakage of oil. The drive end is grease lubricated but oil lubricant is now available making the unit all oil lubricated and eliminating grease requirements.

**DIRECTION OF ROTATION:** Standard machines have a right hand drive shaft for vertical air flow, and a bottom drive shaft for horizontal air flow. If machines are required with a left hand or top drive shaft, all that needs to be done is turn the gearcase and trough through 180°.

## User benefits

The delivered air is guaranteed to be oil free because internal lubrication is unnecessary, and because all HR Blowers Vehicle Blowers are constructed with air gaps which completely isolate bearing and gear lubrication from the compression chamber.

Noise levels are kept to a minimum. Mechanical noise levels have been reduced by the running accuracy of the taper mounted gears. Air noise is reduced by carefully designed air ports and the elimination of resonant unbraced surfaces.



## Specification summary:

Our truck mounted Roots type blowers are engineered for high performance and long service life:

- A range of 3 sizes
- Impellers made from SG iron and cast with integral shafts
- Precision ground spur gears, taper mounted onto the impeller shafts
- High quality bearings for long operational life
- Oil lubricated versions for increased service life and particularly suitable for operation higher ambient temperatures, the Oil-lube HRBV (RBTM) is a natural progression on the original grease/oil lubricated version.

## Sizes and capacities

- Capacities from 220 to 2300 m<sup>3</sup>/hr
- Pressures to 1240 mbar
- Vacuums to 475 mbar

## Applications

- Truck mounting for vehicle tank extraction
- Dry bulk conveying of powders, animal feeds etc.
- Land based pneumatic conveying systems
- Vacuum as well as positive pressure operation

## Performance

The graphs and table below show the performance as blowers. However all three sizes can operate as exhausters at vacuums up to 475mbar or combinations of pressure and vacuum.

	SPEED RPM	500mbar		700mbar		900mbar		1100mbar	
		M <sup>3</sup> /HR	kW	M <sup>3</sup> /HR	kW	M <sup>3</sup> /HR	kW	M <sup>3</sup> /HR	kW
68	1200	520	12	480	17	450	27.5	—	—
	1400	640	14	600	22.5	570	27	510	31
	1600	750	16	710	25	680	30	620	38
	1800	880	18	840	27.5	810	32.5	750	42
	2000	980	20	940	30	910	37.5	850	45
	2200	1110	22	1070	32.5	1040	40	980	47
	2400	1220	24	1180	35	1150	44.5	1090	52.5

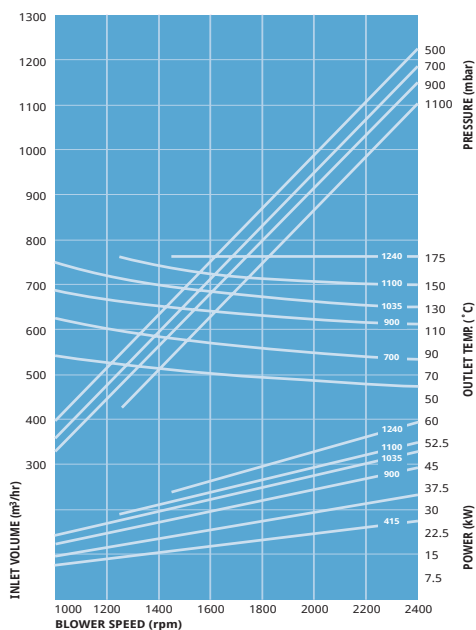
	SPEED RPM	400mbar		550mbar		700mbar		900mbar	
		M <sup>3</sup> /HR	kW	M <sup>3</sup> /HR	kW	M <sup>3</sup> /HR	kW	M <sup>3</sup> /HR	kW
610	1200	640	14	620	17	590	27.5	560	27
	1400	820	15	800	20	770	27	740	30
	1600	1000	16.6	980	22.5	950	30	920	35
	1800	1180	19	1150	24	1120	33	1090	40
	2000	1340	22.5	1310	28	1280	36	1250	44.5
	2200	1480	24	1450	30.5	1420	39	1390	47
	2400	1620	26	1590	33	1560	42	1530	52.5

	SPEED RPM	300mbar		500mbar		700mbar	
		M <sup>3</sup> /HR	kW	M <sup>3</sup> /HR	kW	M <sup>3</sup> /HR	kW
613	1200	980	14	900	20	800	27
	1400	1200	15	1120	23	1030	31
	1600	1400	17	1320	27	1230	35
	1800	1610	19	1530	31	1440	40
	2000	1820	22.5	1740	34	1650	45
	2200	2040	24	1960	37	1870	49
	2400	2240	27.5	2160	42	2070	53

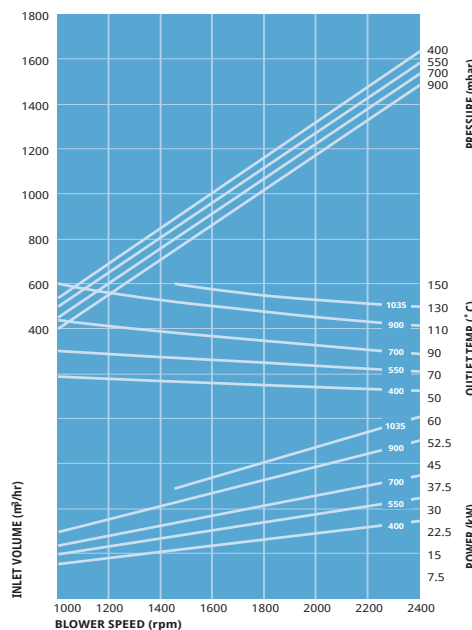
\*The relief valve should be selected, set and maintained to pass all the volume delivered without the pressure at the outlet of the blower exceeding the above maximum pressure when the minimum recommended speed is that shown in the above table.

**Caution:** The bhp remains constant for any given impeller speed and outlet pressure. When selecting power take-off equipment, relate the bhp to the blower input shaft speed if a speed increasing gearbox is used. The torque increases in direct proportion to the blower gearbox ratio.

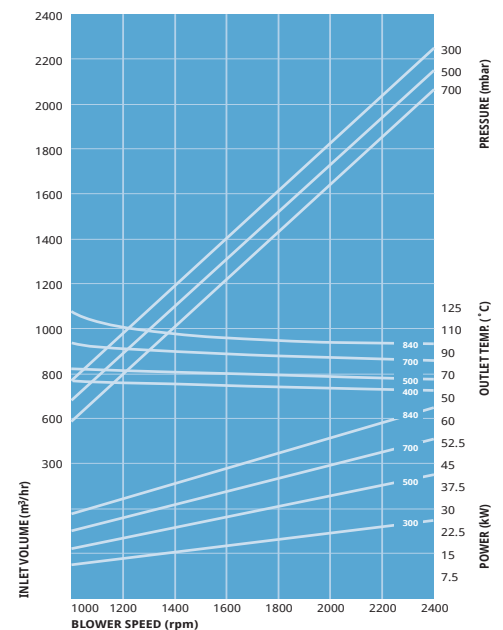
### 68 RBTM PERFORMANCE GRAPH

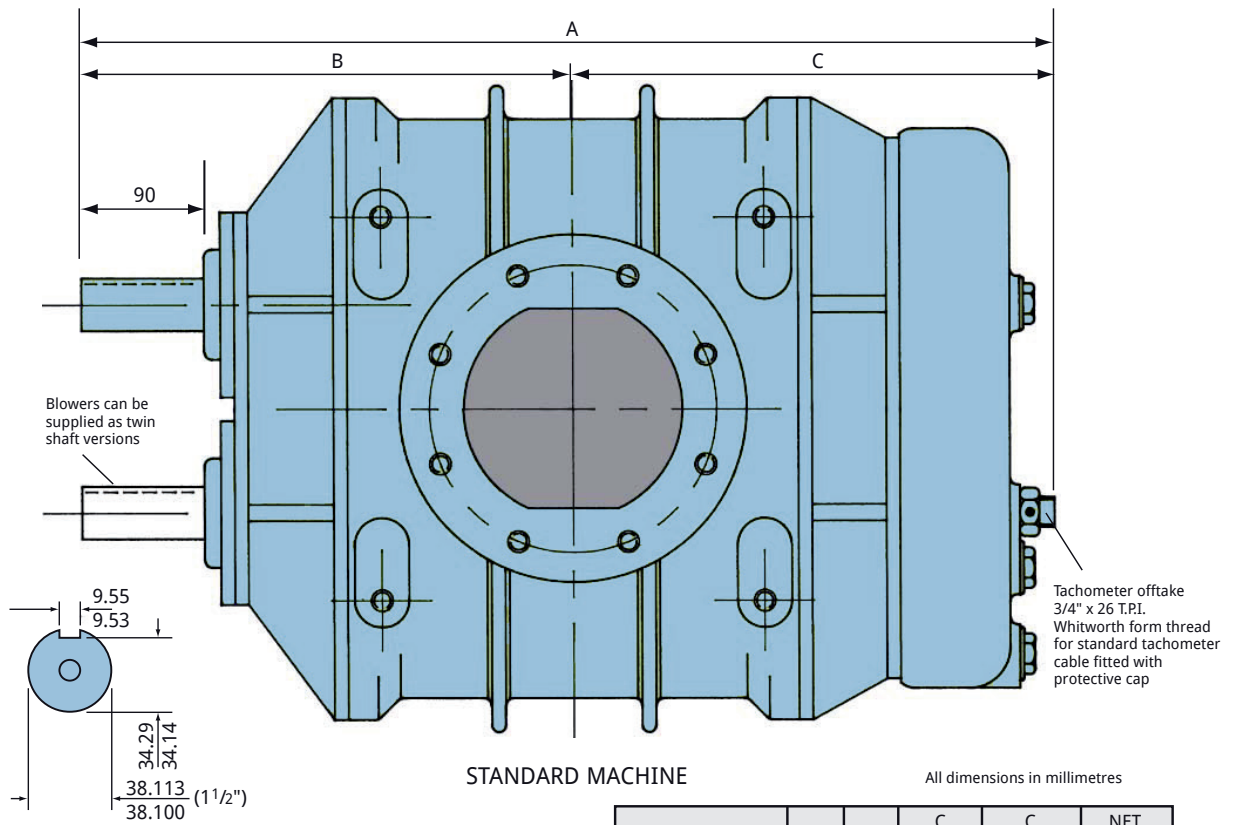


### 610 RBTM PERFORMANCE GRAPH



### 613 RBTM PERFORMANCE GRAPH



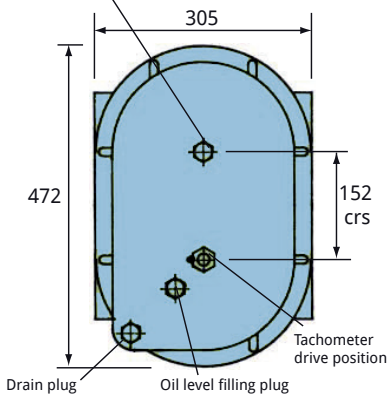


STANDARD MACHINE

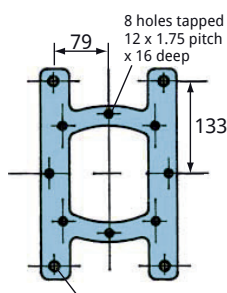
All dimensions in millimetres

BLOWER	A	B	C WITH TACHO.	C WITHOUT TACHO.	NET WEIGHT Kg
68 HRBV (RBTM)	601	296	305	289	120
610 HRBV (RBTM)	651	321	330	312	143
613 HRBV (RBTM)	727	359	368	350	165

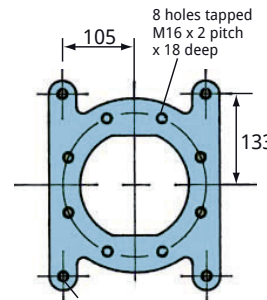
Alternative tachometer drive or oil filter position



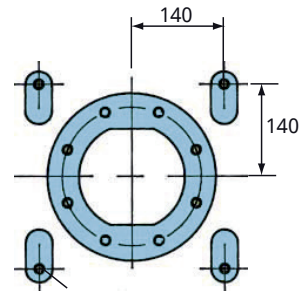
FLANGES



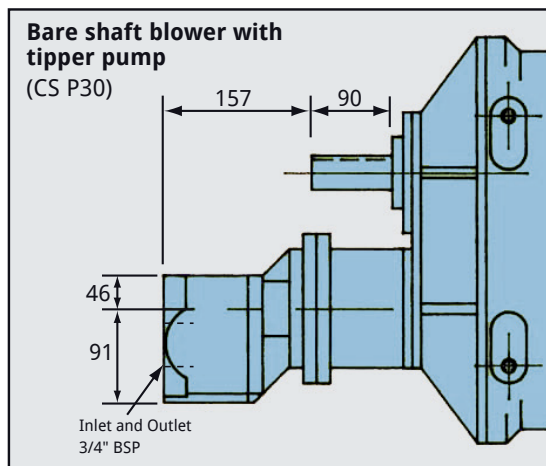
68 HRBV (RBTM)



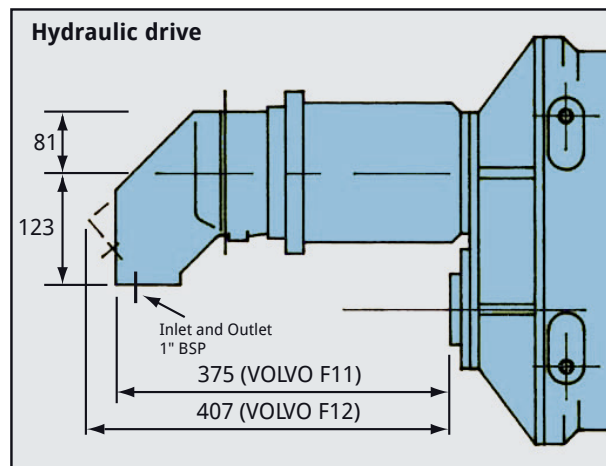
610 HRBV (RBTM)



613 HRBV (RBTM)



N.B. Other types of pumps with compatible flange/shaft dimensions may be fitted e.g. Volvo F1 Series



N.B. Volvo tipper pump can be fitted/supplied in combination with Volvo hydraulic drive motors.

For accurate performance characteristics please contact HR Blowers



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