HRblowers
UK manufactured positive displacement blowers

hrblowers.co.uk
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Positive Displacement Air Blowers

HR51, 52, 53

Blower Range: 1973 - 13306 (M^3/HR)

Based on Success

HR Blowers are one of the world's leading air blower manufacturers and have a reputation for quality, innovation and service.

Design Features

The conservative load carrying capacity of the larger diameter rolling element bearings ensures an extended operating life.

Timing gear life is also extended by controlled lubrication systems.

The computer calculated impeller profiles ensure maximum volumetric efficiency with minimum absorbed power without sacrificing torsional rigidity.

The high rigidity of the impeller / shafts permits a higher pressure rise to be obtained than with other machines of comparable size. The generous shaft diameter keeps drive stresses low.

Gear and shaft strength is substantially increased by the use of taper mounted gears which do not need keyways for location. Setting of the gear wheels to obtain correct timing of the impellers is simplified, a feature that facilitates field maintenance.

Precision ground and hardened steel gears are used to ensure smooth, silent running and accurate timing of the rotating impellers. A controlled lubrication system is provided to ensure efficient operation without waste of energy in the gearcase.

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

Design and manufacture is in accordance with metric standards.

Use as an Exhauster

If used as an exhauster and dust or liquids could be drawn into the machine due to inadequate filtration, closed end rotors should be specified. This will minimise risk of loss of dynamic balance due to material inside the rotors.

Specification

CASING: The cylinder, headplates and gearcase are manufactured from cast iron. The cylinder on sizes 62, 63, 72 and 73 machines incorporates inspection covers which facilitate the checking of internal clearances.

IMPELLERS AND SHAFTS: The impellers are made from ductile and have pressed steel shafts. The shaft diameter of machines in the HR range is larger than that of earlier designs enabling increased operating pressure 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 lubricated parallel roller bearings are used at the drive end of the blower. Spherical roller bearings at the opposite end are splash lubricated from the gears. In addition to their normal duty of carrying radial loads associated with the differential air pressure on the rotating impellers, the spherical bearings provide axial location of the impellers.

LUBRICATION: An advanced 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.

DIRECTION OF ROTATION: Standard machines have top air inlet and bottom discharge with a right hand shaft rotating in a clockwise direction. Bottom inlet and top discharge and/or left hand shaft can be supplied if specified at time of order.

BLOWER PROTECTION SYSTEM: (optional extra). A number of insulated probes projecting into the cylinder which are electrically connected to one another and to a junction box mounted on the blower can be fitted. To operate this system a control box is also required. The protection system (UK and foreign patents granted) detects excessive closure of the fine working clearances within the blower which might be caused by overload. Should this happen, the prime mover is shut down automatically to prevent seizure of the blower.

User Benefits

- The delivered air is guaranteed to be oil free because internal lubrication is unnecessary, and because all HR Blowers Positive Displacement Air 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.
- The generous diameter of the drive shaft permits the use of V-belt drives without the need for a double outer bearing.
- A patented blower protection device can be supplied. This is designed to trip the drive motor and shut down the blower if the internal clearances are reduced to a dangerous level.
- Thermostatically controlled heaters can be fitted as an optional extra. These regulate lubricating oil temperatures, and permit the use of a single grade oil under widely varying ambient conditions.
- Air blowers can also be used as air exhausters. Performance charts on application.

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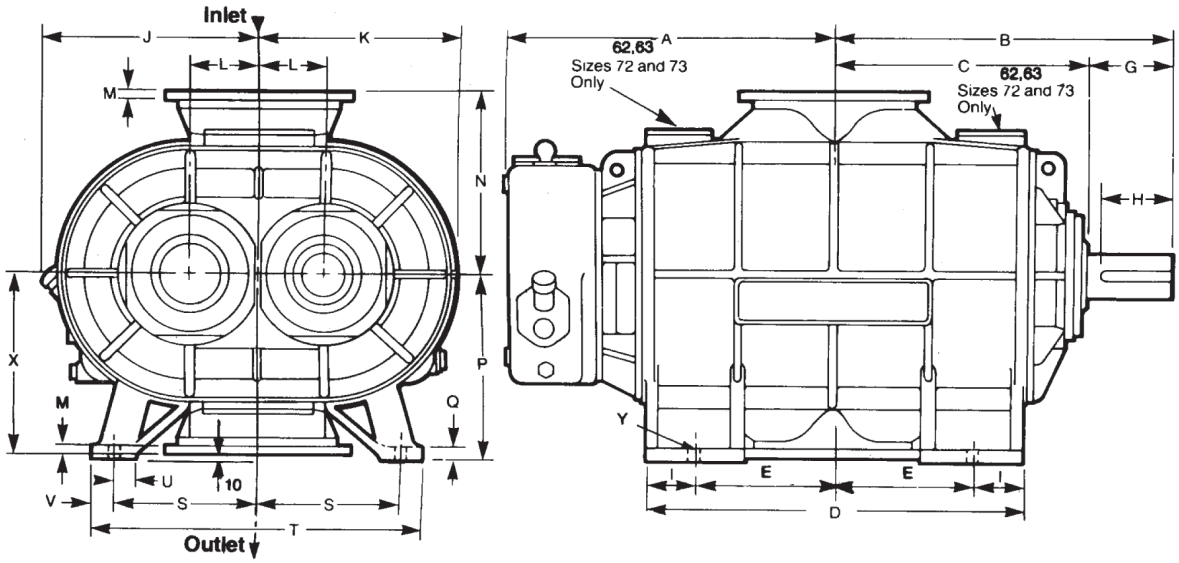

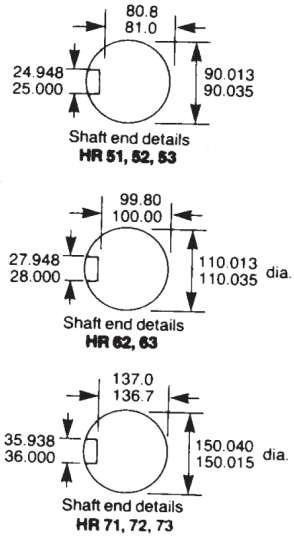

Inlet and Outlet Flanges / Net Weight

Size 51: 300 dia. bore 440 o/dia. with 12 holes 22 dia. equally spaced on 395 pcd. off centres
Size 52: 350 dia. bore 490 o/dia. with 12 holes 22 dia. equally spaced on 445 pcd. off centres
Size 53: 400 dia. bore 540 o/dia. with 16 holes 22 dia. equally spaced on 495 pcd. off centres

Dimensions

Size	A	B	C	D	E	G	H	I	J	K	L	M	N	P	Q	S	T	U	V	X	Y
HR51	603	610	430	550	180	180	140	95	435	435	140	25	390	400	30	310	700	60	40	390	4-27mm dia holes for 24mm dia holding down bolts
HR52	713	720	540	770	290																
HR53	813	820	640	970	390																

Blower Performance

HR Size	Speed rpm	300 mbar M³/HR	300 mbar kW	500 mbar M³/HR	500 mbar kW	700 mbar M³/HR	700 mbar kW	1000 mbar M³/HR	1000 mbar kW
51	1550	7551	76	7326	123	7147	170	6927	240
	1400	6733	69	6509	111	6330	154	6110	217
	1200	5644	59	5419	95	5241	132	5021	186
	1000	4555	49	4330	79	4152	110	3932	155
	800	3465	39	3241	63	3062	88	2842	124
	600	2376	29	2151	48	1973	66	—	—
52	1550	10554	104	10250	169	10009	235	—	—
	1400	9416	94	9112	153	8871	212	—	—
	1200	7898	80	7595	131	7354	182	—	—
	1000	6381	67	6077	109	5836	151	—	—
	800	4864	54	4560	87	4319	121	—	—
	600	3346	40	3043	65	2802	91	—	—
53	1550	13306	129	12936	211	Maximum pressure rise for size 53 is 550 mbar See performance chart for details.			
	1400	11876	116	11506	191				
	1200	9970	100	9600	163				
	1000	8064	83	7693	136				
	800	6157	67	5787	109				
	600	4251	50	3881	82				

The volume of air delivered is measured at inlet conditions of 15°C and 1013 mbar absolute

Weight

Net Weight
Size 51: **900kg**
Size 52: **1220kg**
Size 53: **1570kg**

For accurate performace characterisitcs please contact HR Blowers

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