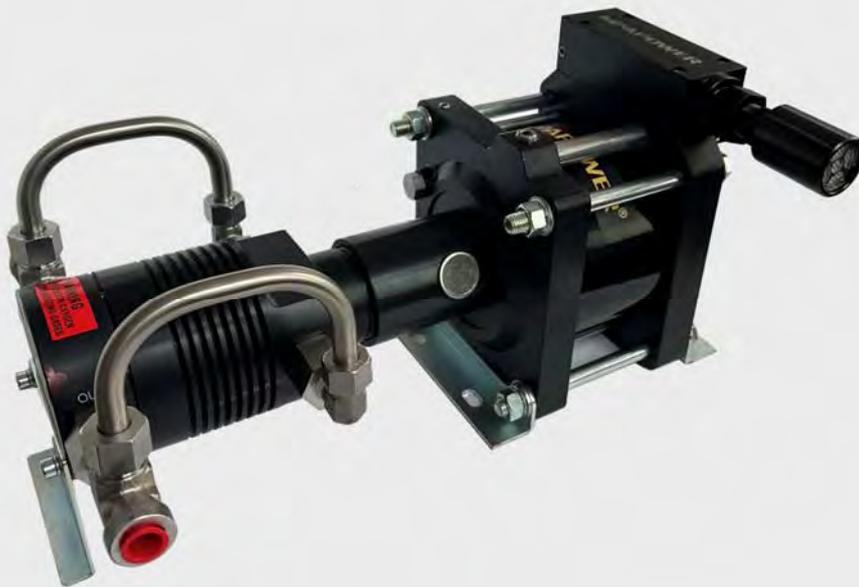


Refrigerant Pumps

制冷剂增压泵

关注公众号



CATALOG

关于我们 About Us



上海兆帕流体动力有限公司（MPAPOWER®）成立于2004年，深耕流体控制领域20年，在流体（气/水/油及特殊介质）精密控制方面积累了丰富的经验。

我们作为中国工业控制测量和控制标准化技术委员，参与国家标准建设，做出了应有的贡献。

我们专注于压力和流量的精密控制，通过持续的应用创新，提供真空到700MPa超高压的系统集成解决方案，覆盖气、液（水、油）及冷媒、NMP、二氧化碳、氢气、氧气等各类特殊介质，满足静压、爆破及脉冲试验、冷媒集中供料、高洁净度晶圆清洗、高压液相色谱装柱、气体注射成型高压气体精密注入、灭火剂充瓶回收、加氢、充氧等多方位需求，集研发、生产、安装、维保服务于一体，实现客户需求的“端到端”闭环服务。在售后服务方面，凭借充足的库存和零件级的维修能力，确保快速响应的售后服务。

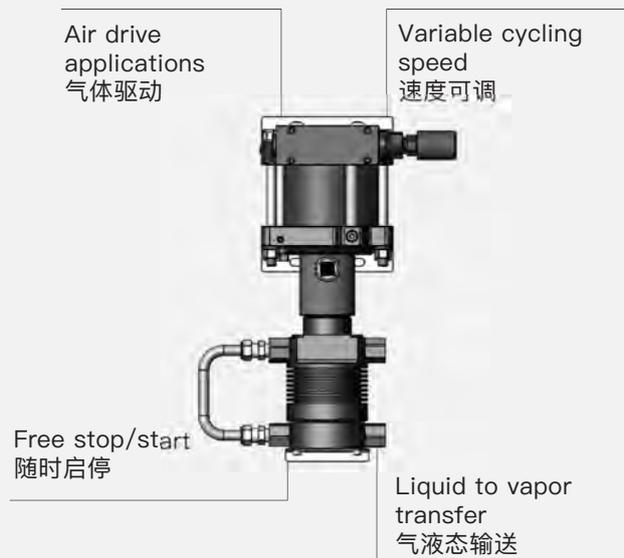
区别于常规集成商，我们深耕基础研发，拒绝简单的硬件堆砌，坚持回归基本原理，依托多年积累的国际先进技术经验，掌握从增压泵、高压阀等关键部件到整机系统从 Know-Why 到 Know-How 的全链路开发能力。在坚守国际品质标准的同时，实现核心技术的自主可控与国产化替代。凭借性能对标一流、供应本地化的差异化优势，MPAPOWER® 致力于为行业客户提供更高性价比、响应更快速的控制系统解决方案。

我们的优势在于技术领先的基础元件和多年行业深耕的经验积累，灵活的非标定制能力和快速的交付能力，广泛服务航空航天、石油化工、核能核电、船舶重工、煤炭矿山、化工电力、家电、汽车零部件、生物医药、半导体和新能源等高端领域。

Refrigerant Pumps 制冷剂增压泵



- Efficient pumping of the liquid first then the vapor, to a vacuum of 0.1bar with one pump and requires no complex change over valve mechanism or pressure switches.
高效实现液相与气相真空抽取（真空度达0.1巴），单泵完成无需复杂的换向阀机构或压力开关控制。
- Positive displacement design, configurable for single or two-stage operation, suitable for refrigerant recovery or transfer
容积式，单级和双级设计，可用于制冷剂的回收或传输
- Operating speed is completely variable from zero to the maximum requirement and they will stall against load.
运行速度可调，到压自动停机
- No heat generated during liquid transfer.
液体输送过程无热量产生
- Safe air operation
气体驱动
- No heat, flame or spark risk
不需要用电，无火花风险
- Free stop/start applications
随时启停无任何影响
- Clean in operation, no lubrication required.
无油润滑



Refrigerant Pumps

制冷剂增压泵

Type code: **AMR 5T -2**

Types 系列

AMR are refrigerant pumps designed to reliably handle liquid, vapor, and even supercritical refrigerant states.

AMR系列是制冷剂增压泵，能够为液态、气态乃至超临界状态的制冷剂增压提供可靠的运行支持。

② O-ring Compatibility
密封材质

① Model 型号

- 5A
- 5B
- 5D
- 5T



1-year warranty

① Model

5A	Single stage compress, double acting, no distance piece 单级压缩，双向双作用，无隔离段
5B	Two stage compress, double acting, no distance piece 双级压缩，双向双作用，无隔离段
5D	Single stage compress, double acting, distance piece 单级压缩，双向双作用，隔离段
5T	Two stage compress, double acting, distance piece 双级压缩，双向双作用，隔离段

② O-ring Compatibility Table

	O-ring O型圈材质	Refrigerant 制冷剂
-NA 默认空白	Neoprene 氯丁橡胶	R-12, R-22, R-32, R-123, R-134A, R-1230, R-236fa, R-254, R-290, R-404, R-407, R-410, R-500, R-502, FM200, HFO-1234yf
-2	NBR 丁腈橡胶	R-11, R-113, R-114, R-124, R-142
-3	FKM 氟橡胶	R-23, R-112, R-143

PHYSICAL PRIORITIES 物理特性

The physical property of a liquified gas that is of prime concern during the transfer process from one container to another is the vapor pressure. 将液化气体从一个容器转移到另一个容器的过程中，最关键的物理特性为其蒸汽压力。

The vapor pressure is the pressure at which liquefaction occurs and is dependent upon temperature.

蒸汽压力是指液化发生时的压力，其大小取决于介质及温度。

There are a number of different types of CFCs and Halons used throughout the refrigeration and fire extinguisher industries and each have different vapor pressures.

制冷和消防行业中使用的CFCs（氯氟烃）和哈龙（卤代烷）有多种类型介质，每种介质的蒸汽压力各不相同。

The greater the vapor pressure, the easier it is to transfer the substance.

蒸汽压力越大，介质就越容易传输。

Liquified gases are present in liquid form at higher pressure levels and as a gas at lower pressure levels.

可液化气体在较高压力下以液态形式存在，在较低压力下则以气态形式存在。

Usually the gas phase of the liquified gas is drawn for use.

通常情况下，使用的是液化气体的气相部分。

The cylinder pressure will remain constant at the vapor pressure of the substance as long as there is any liquid remaining in the cylinder.

只要钢瓶内还有液体残留，瓶内压力就会保持该介质的蒸汽压力。

When the pressure drops below the vapor pressure and there is no liquid phase of the gas left, then the pump/booster inlet will see a decreasing vapor pressure.

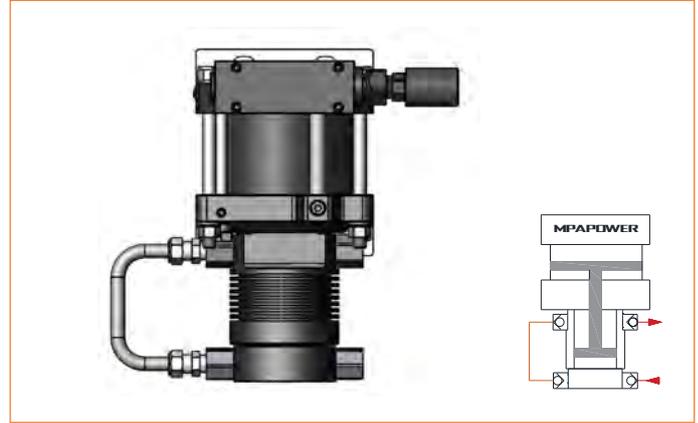
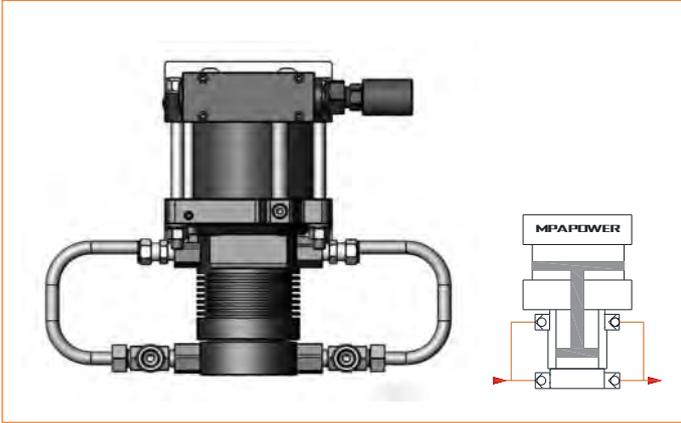
当压力降至蒸汽压力以下且没有液态气体剩余时，气瓶内的压力会逐步降低，此时增压泵的入口压力会相应降低。

It is recommended to keep the operating frequency below 60 cycles/min, as excessive speed will significantly reduce the service life.

建议增压泵的运行频率控制在60次/分钟以下，过快的运行速度会显著降低使用寿命。

Refrigerant Pumps

制冷剂增压泵



AMR 5A

- Single stage compress, double acting
单级压缩，双作用
- Optimal for use with liquid media
更适合液态使用
- Higher flow rate.
更大的流量

AMR 5B

- Two stage compress, double acting
双级压缩，双作用
- Optimal for use with vapor media
更适合气液混合态使用
- Higher compress ratio.
更高的压缩比

General data 参数

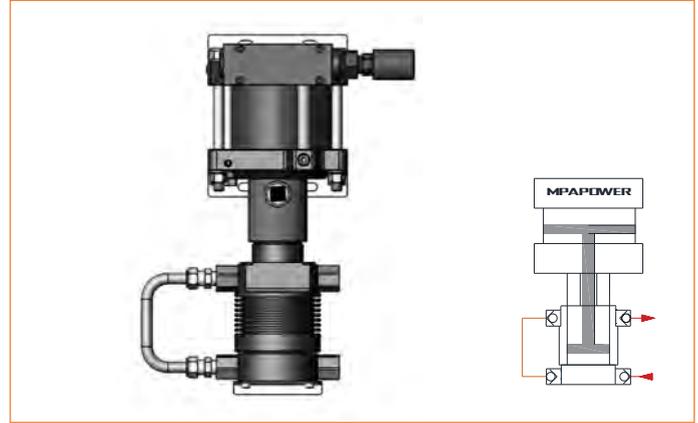
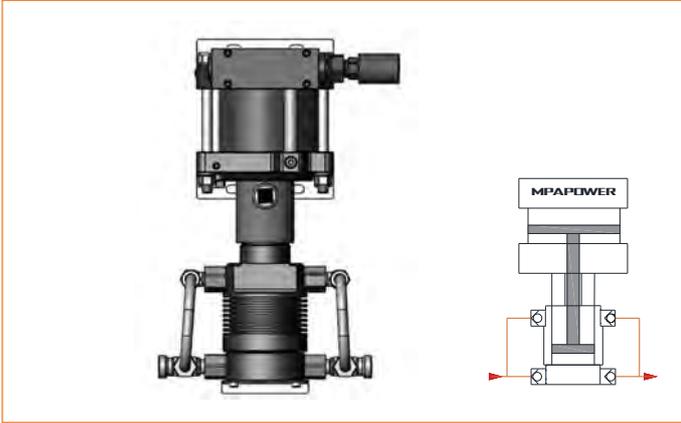
Model No	AMR 5A
Air drive pressure	40-150psi
Inlet pressure min.	0
Outlet pressure max.	1250psi
Max compression ratio	10:1
Piston displacement per cycle	0.316L (19.31cu. Inch)
Stall pressure formula	4*Pa+Ps
Inlet port	3/8"FNPT
Outlet port	3/8"FNPT
Air drive port	1/2"RC
Weight	13kg

General data 参数

Model No	AMR 5B
Air drive pressure	40-150psi
Inlet pressure min.	-0.7bar (-10psi)
Outlet pressure max.	1250psi
Max compression ratio	100:1
Piston displacement per cycle	0.164L (10cu. Inch)
Stall pressure formula	4*Pa+Ps
Inlet port	3/8"FNPT
Outlet port	3/8"FNPT
Air drive port	1/2"RC
Weight	12.5kg

Refrigerant Pumps

制冷剂增压泵



AMR 5D

- Single stage compress, double acting
单级压缩，双作用
- Distance piece, prevents media mixing, and ensures contaminant-free operation.
隔离段，避免介质交叉，确保无污染运行。
- Optimal for use with liquid media
更适合液态使用
- Higher flow rate.
更大的流量

AMR 5T

- Two stage compress, double acting
双级压缩，双作用
- Distance piece, prevents media mixing, and ensures contaminant-free operation.
隔离段，避免介质交叉，确保无污染运行。
- Optimal for use with vapor media
更适合气液混合态使用
- Higher compress ratio.
更高的压缩比

General data 参数

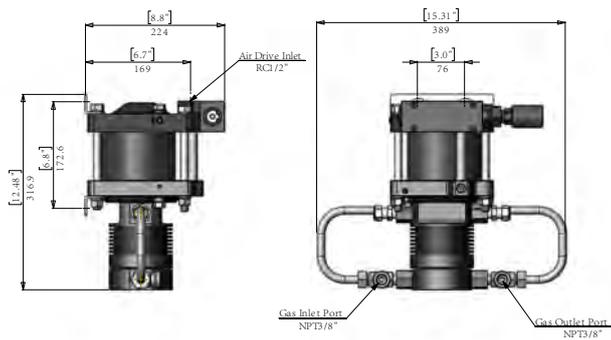
Model No	AMR 5D
Air drive pressure	40-150psi
Inlet pressure min.	0
Outlet pressure max.	1250psi
Max compression ratio	10:1
Piston displacement per cycle	0.316L (19.31cu. Inch)
Stall pressure formula	4*Pa+Ps
Inlet port	3/8"FNPT
Outlet port	3/8"FNPT
Air drive port	1/2"RC
Weight	14kg

General data 参数

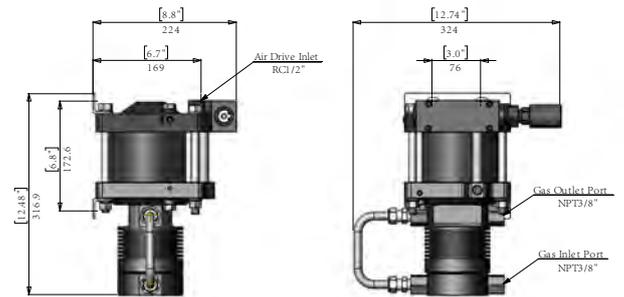
Model No	AMR 5T
Air drive pressure	40-150psi
Inlet pressure min.	-0.7bar (-10psi)
Outlet pressure max.	1250psi
Max compression ratio	100:1
Piston displacement per cycle	0.164L (10cu. Inch)
Stall pressure formula	4*Pa+Ps
Inlet port	3/8"FNPT
Outlet port	3/8"FNPT
Air drive port	1/2"RC
Weight	13.5kg

Dimensions 尺寸

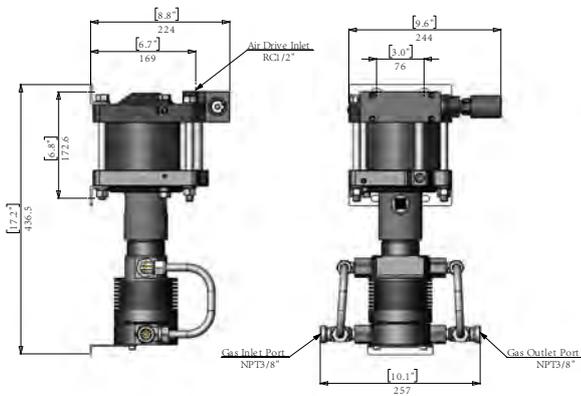
AMR 5A



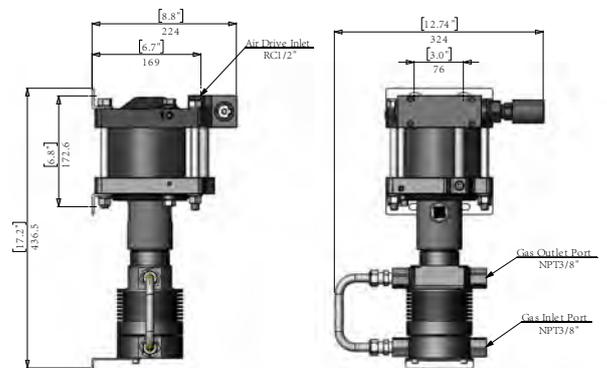
AMR 5B



AMR 5D



AMR 5T





制冷剂及灭火剂回收分装系统

- 安全防爆，利用压缩空气作为动力，不需要电源，无火花产生，特别适合需要防爆的场合；
- 无油，自润滑密封结构，在工作状态时不需要添加润滑油；
- 适用于多种制冷剂和灭火剂，如R22、R134a、R410a、R407a、R1234yf、FM200等；
- 高压腔体与外界隔离，保证高压腔内的气体介质不被污染；
- 当达到设定输出压力，大小活塞两端压力平衡，增压泵停止工作，此时不再消耗能量，也没有任何热量产生，具有良好的压力保持特性。当有压力泄漏时，增压泵自动补充压力，频繁启动无任何影响；
- 可根据要求设计制造非标系统满足客户个性化需求。





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