

OUT680R 电子油位平衡器 Oil level Regulators



OUT680R 管理压缩机的曲轴箱润滑油油位，由于从储油式油分离器或储油器采用主动油位调节供油，解决了单台压缩机以及多压缩机并联时的油分配问题。此油位调节器能控制油位在油视镜的 40%~60%之间。

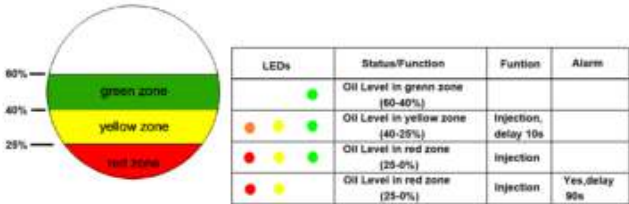
OUT680R monitors and controls the oil level in the refrigerant compressors. Active oil level regulation is used to supply oil from oil storage separators or reservoir, solved the oil distribution problem when a single compressor or multiple compressors are connected in parallel. It keeps the level between 40% to 60% height of the sight glass.

注：不适用于高压腔涡旋与螺杆压缩机，上述压缩机油位管理请选用 OUT580R。
Note: Not suitable for high-pressure chamber scroll compressors and screw compressors. Please use OUT580R for oil level management of the above compressors.

特征 Features

- 用于 R744 (CO2)、R410a 及 HFO、HFC、HCFC、CFC 类制冷剂
Used for R744(CO2), R410a and HFO, HFC, HCFC and CFC refrigerants
- 采用高精度霍尔传感器精确感测油位，实现三区段油位控制
3 Zone Level Control by using precise Hall-Sensor measurement
- 摆臂磁浮子不受泡沫、光线及冷冻油清洁度的影响
Not prone to errors by foaming, light or the oil cleanliness like the swing arm magnetic float
- 状态指示灯实时显示油位、补油和 SPDT 报警输出
SPDT Alarm output, oil replenishment status and level indication by LED's
- 进油嘴内置滤网，可拆卸清洗
An filter installed in the oil inlet , removable cleaning
- 适用于高压供油系统及低压供油系统
Suitable for Hi-pressure return oil systems and Low-pressure return oil systems

视镜油位控制区段 Sight-glass level control zones

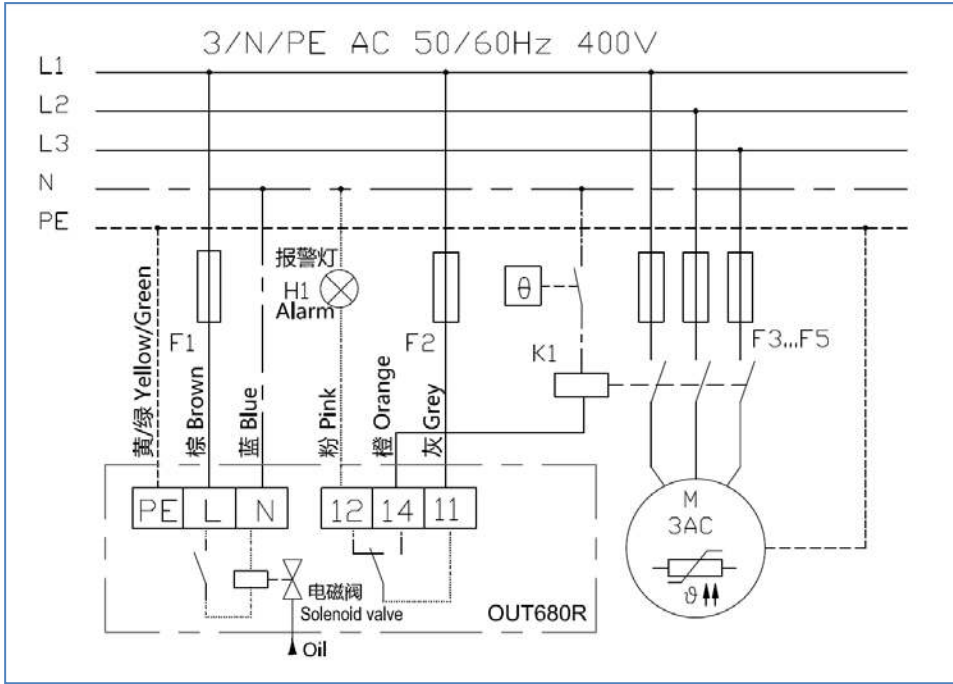


左边-油位在 40%-25% 亮橙色，油 位在 25%以下 亮红色
Left—Orange/Red: Low oil level/Oil Level Failure

中间-补油时亮黄色
Mid.—Yellow ON/OFF- Injection ON/OFF

右边-继电器吸合时亮绿色，报警时断开
Right—Green ON/OFF- OUT relay ON/OFF (Alarm)

电气接线原理图 Electrical wiring schematic diagram



订货标记示例 (Ordering information)

OUT680R – 1 1 □ / 114

型号 (Basic series designation)

镜片 (Sight Glass) 1: F60-3 3 hole
2: F60-34 7 hole

供电电压 (Supply) 1: 230V 50/60Hz
2: 24V 50/60Hz

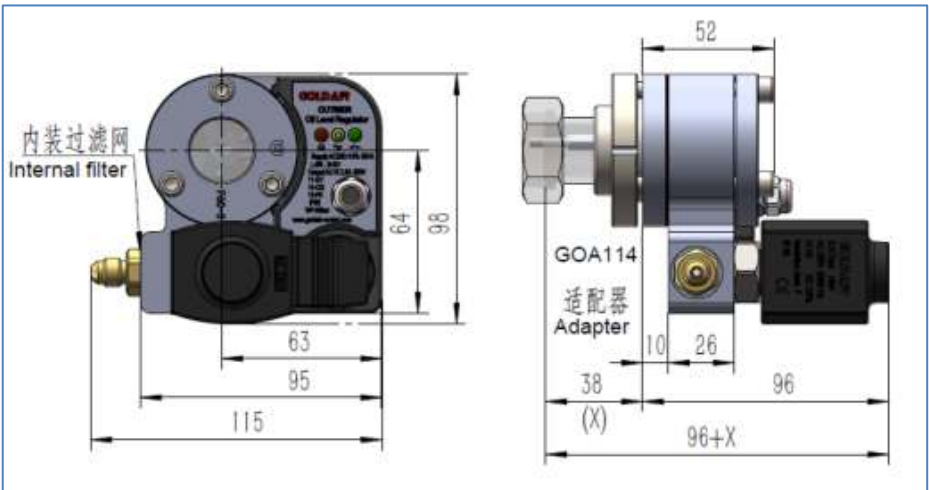
接线长度 (Cable length) Blank :3.0 meter

适配器 (Selection of adaptor) Blank : No adapter
20F: Extended flange
34R: 3-4 hole flange
118: 1-1/8"-18UNEF-2A
114: 1-1/4"-12UNF-2B
134: 1-3/4"-12UNF-2B
34N: 3/4"-14NPTF
24M: M24x1

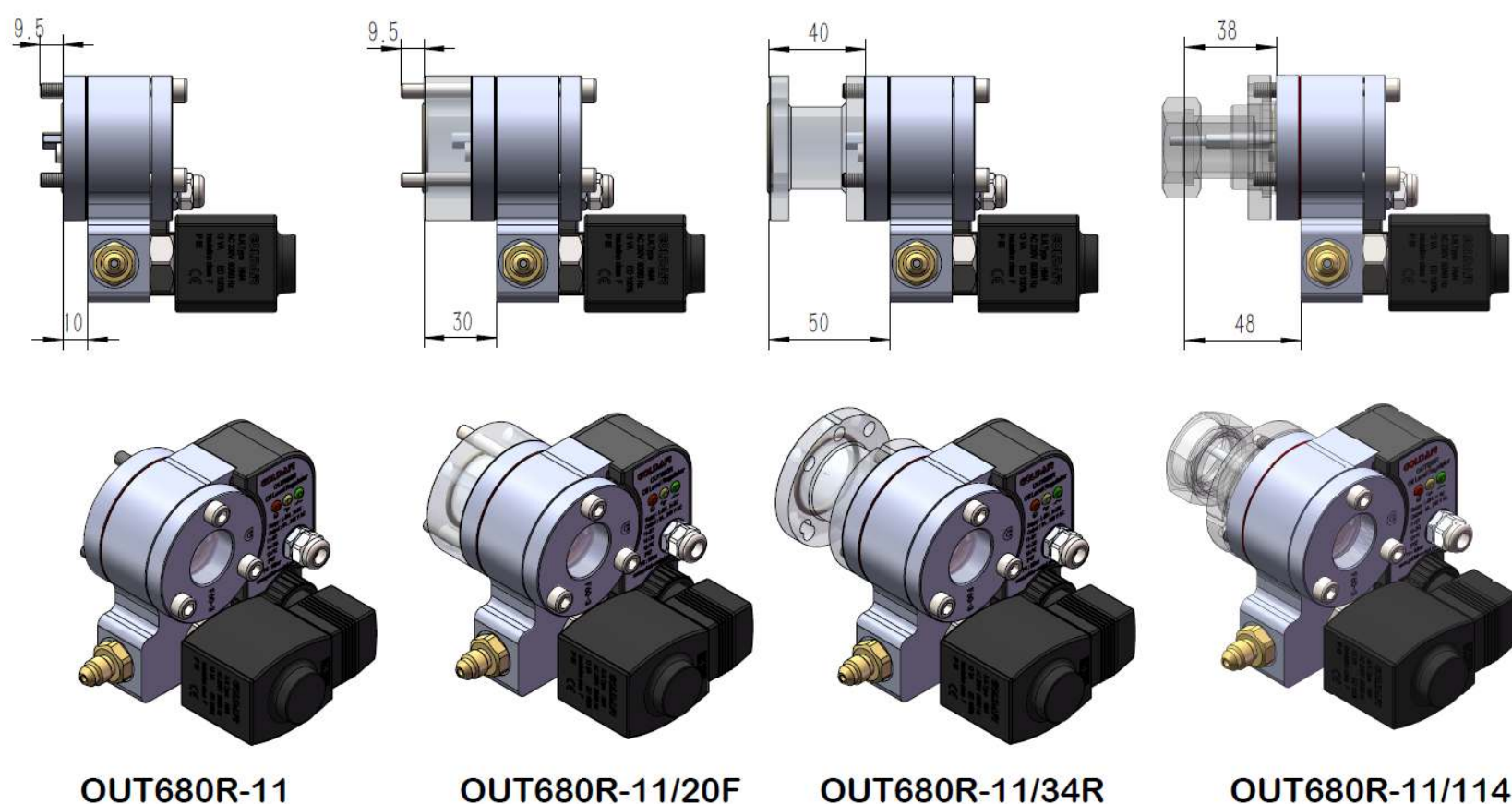
技术规格 Technical specifications

供电电压 Supply	230V AC, +10/-15%, 17 VA, 50/60Hz 24V AC, +10/-15%, 17 VA, 50/60Hz
环境及储存温度 Ambient/Storage Temperature	-40 to +60°C
湿度 Humidity	0 to 95% RH (non-condensing)
介质温度 Media Temperature	-40 to +100°C
工作压力 Max Operating pressure	PS: 60bar
测试压力 Test pressure	66bar
振动 Vibration resistance(EN60068-2-6)	Max. 4g, 10...250Hz
油位控制 Level control	40% to 60% of sight glass height
供油压差 Solenoid valve MOPD	31bar
补油流量 Flow rate at ΔP=3.5bar	1.8 ltr/min, H ₂ O at 20°C
补油延时 Time Delay Filling	5 to 10 sec
报警输出 Alarm contact	SPDT, 5A, 240V AC, C300, dry contact
报警延时 Time Delay Alarm	90 sec
机械寿命 Mechanical life	约 1 百万次 (循环) Approx.1 million switching cycles
连接电缆 Connection cable	6xAWG 20# 颜色编码 Colour coded
防护等级 Protection class acc.to EN 60529	IP67(主体 Base) IP65(电磁阀 Coil)
认证 Markings	CE ,CCC,EAC
引用标准 Applied Standards	EN12284,EN378,EN61010,EN61000-6-1/-2
材料 Materials	AW6081,6082,SUS304,PA66/PA6+GF
油路连接 Oil connection	7/16"-20 UNF male, with strainer and O-ring
油介质 Permitted oils	矿物油、合成油和酯油，不含添加剂 Standard mineral and ester oil without additives
制冷剂介质 Permitted refrigerants	HFO,HFC,HCFC,CFC,CO ₂
安装位置 Orientation of base unit	水平安装 Horizontal, +/- 1°
重量 Weight	约 1000g (不含适配器) Approx.1000g (No Adapter)

图 1：外形尺寸 Figure 1: Dimensions



典型配置 Typical configuration



正面指示灯与背面附件 LEDs indication, back parts



产品选型 Selection of type

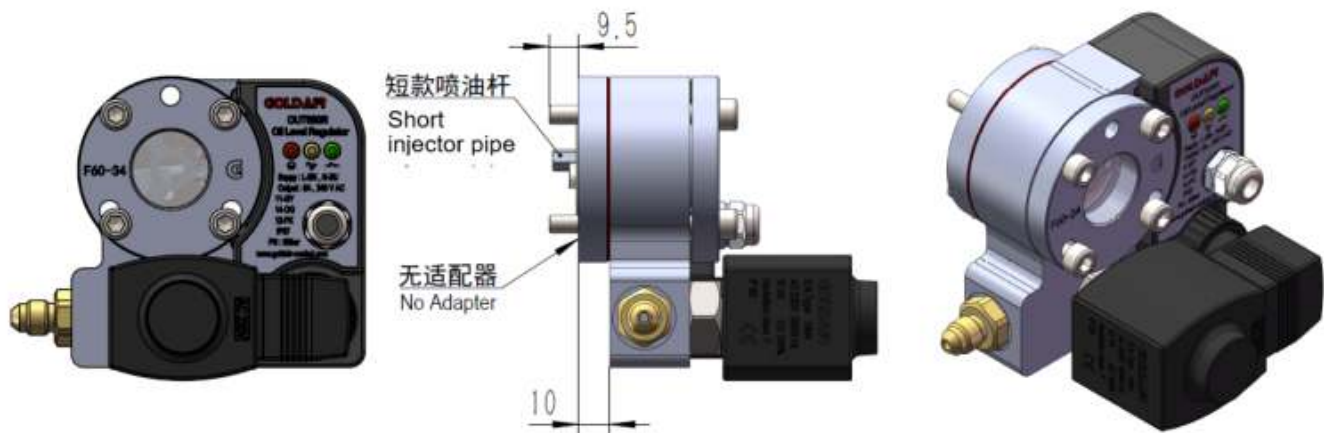
选择镜片配置 Select sight glass

- 1: F60-3 镜片, 带 3 颗不锈钢 M6x55 螺栓; F60-3 sight glass, with three M6x55 bolts of stainless Steel
用 3 颗螺栓与 3 孔法兰视镜的压缩机直接联接
Connect directly to the compressor of the three-hole flange sight glass with three bolts
用 3 颗螺栓与适配器联接后与压缩机相联
Connect to the compressor after connecting it to the adapter with three bolts



OUT680R-11/114

- 2: F60-34 镜片, 带 4 颗不锈钢 M6x55 螺栓; F60-34 sight glass, with four M6x55 bolts of stainless Steel
用 4 颗螺栓与 4 孔法兰视镜的压缩机直接联接
Connect directly to the compressor of the four-hole flange sight glass with four bolts
用 3 颗螺栓与 3 孔法兰视镜的压缩机直接联接
Connect directly to the compressor of the three-hole flange sight glass with three bolts
用 3 颗螺栓与适配器联接后与压缩机相联
Connect to the compressor after connecting it to the adapter with three bolts



OUT680R-2

选择供电电压（电磁阀的工作电压与供电电压相同）

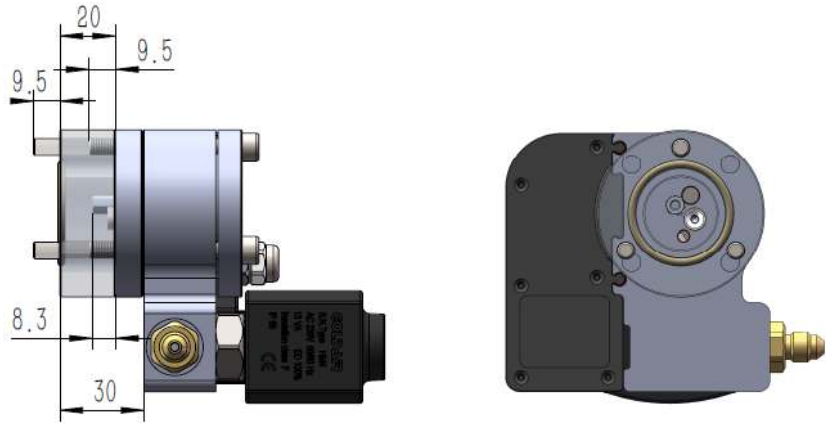
Select the supply voltage (the working voltage of the solenoid valve is the same as the supply voltage).

- 1: 230V AC, +10/-15%, 17 VA, 50/60Hz
2: 24V AC, +10/-15%, 17 VA, 50/60Hz

适配器及喷油管 Adapter & Oil injection pipe

适配器供货选型 (图 1 示例) Adapter selection guideline (Refer to Figure 1)

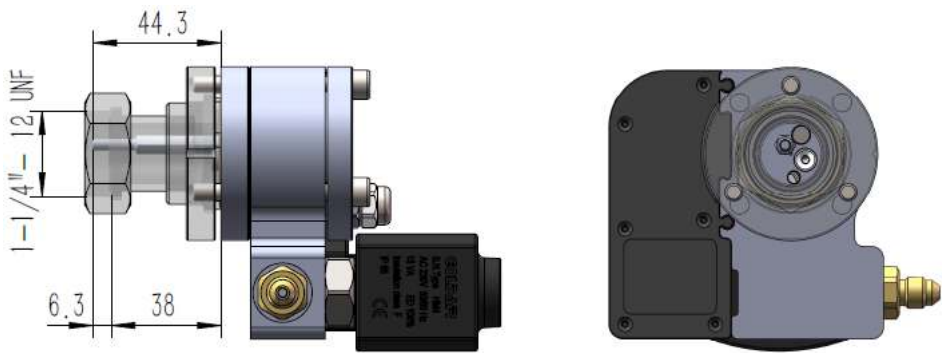
型号Model	名称Description	长度Length(X)	总高 Lenght (96+X)	适配压缩机系列Compressor Series
OUT680R-1	无适配器 No Adapter	0	96	Frascold: A, B, D, Q, S, V, W, Z, A-SK, D-SK, F-SK, Q-SK, S-SK Bitzer: 4V,4T,4P,4N,4-HVC-10K,THC-12K,PHC-15K,NHC-20K,VSL-15K,TSL-20K,PSL-25K,NSL-30K Bock: HA, HG, O-Series ; Dorin: all KP, K sizes Copeland: 4M & 6M , D2, D3, D4, D6, D9, 4CC, 6CC,ZBH,D8D, D8S RefComp: SP4,SP6,SP8,SPM INVOTECH: YSM,YSF ; Panasonic: 3CC, 2CC, ACC, C-SC
OUT680R-2	无适配器 No Adapter	0	96	Bitzer: 4J,4H,4G,6J,6H,6G,6F,8GC,8FC
GOA20F	20F 3-/4 孔法兰加高块 (附 4 颗M6x75 螺栓) 20F 3-/4 hole extended Flange Adapter (4-M6x75 bolts attached)	20	116	同上 Above
GOA34R	34R 3-/4 孔法兰适配器 34R 3-/4 hole Flange Adapter	40	136	Frascold: A, B, D, Q, S, V, W, Z, A-SK, D-SK, F-SK, Q-SK, S-SK Bitzer: 4V,4T,4P,4N,4-HVC-10K,THC-12K,PHC-15K,NHC-20K,VSL-15K,TSL-20K,PSL-25K,NSL-30K,4J,4H,4G,6J,6H,6G,6F,8GC,8FC Bock: HA, HG, O-Series ; Dorin: all KP, K sizes Copeland: 4M & 6M , D2, D3, D4, D6, D9, 4CC, 6CC,ZBH,D8D, D8S RefComp: SP4,SP6,SP8,SPM INVOTECH: YSM,YSF ; Panasonic: 3CC, 2CC, ACC, C-SC
GOA118-46	1-1/8"-18UNEF-2A外螺纹 1-1/8" -18 UNEF-2A Thread adapter	37	133	Bitzer: 2KC, 2JC, 2HC, 2GC, 2FC, 2EC, 2DC,2CC, 4FC, 4EC, 4DC, 4CC Bock: HA12/22/34, HG12/22/34 Dorin: all H, K100C,K150C,K180C, K200CC, K230CS, K235CC, K240SB, K40CC, K50CS, K75CC/CS Maneurop: LT, MT, SM, SZ ; L'UniteHerm: TAH, TAG RefComp: SP2,
GOA114	1-1/4" -12 UNF-2B旋转锁紧适配接头 1-1/4" -12 UNF-2B Rotalock adapter	38	134	Copeland: ZB15 to ZB114, ZF06 to ZF54, ZFI20 to ZFI81 ZBD21 to ZBD45 - after 06/2014, ZS21 to ZS45 - after 06/2014 XECOM: Series X-/ XR, XA- XH, XW -XD INVOTECH: Series YM,YF
GOA134	1-3/4" -12 UNF-2B旋转锁紧适配接头 1-3/4" -12 UNF-2B Rotalock adapter	42	138	Copeland: ZB130, ZB150, ZB190, ZB220 ZFI 96, ZFI 122, ZFI 140, ZH, ZR 90, 11, 12, 16,19 ZR250 to ZR380, ZF24 to ZF48, ZS56 to ZS11
GOA24M-56	M24x1 外螺纹适配器 M24x1 Screw adapter	56	152	Panasonic C-SBN453
GOA33M	M33x1 外螺纹适配器 M33x1 Screw adapter	47	143	Panasonic 5CF277SA12
GOA34N	3/4"-14NPTF圆锥外管螺纹 3/4"-14NPTF Thread adapter	30	126	Trank: Series K Bitzer: Series ZL, ZM



OUT680R-1 带GOA20F 法兰加高块与短款喷油管
OUT680R-1 with GOA20F and short injector pipe

大部分带有 3 孔- / 或者 4 孔法兰油视镜的压缩机都可以不需要另配适配器，但某些规格的压缩机可能会有干涉，这时可以选配 GOA20F 法兰加高块或者选配 GOA34R 适配器。
 Most compressors with 3-hole - / or 4-hole flange oil sight glasses don't require an additional adapter. However, some specifications of compressors may have interference. In such cases, the GOA20F adapter or the GOA34R adapter can be selected as an option.

- GOA20F 适配器附带 Adapter accessory:
 4 颗不锈钢内六角螺丝 M6x75;
 1 个 $\Phi 32.99 \times 2.62$ HNBR-MR01-70A O 型圈
- GOA34R 适配器附带 Adapter accessory:
 1 个 $\Phi 32.99 \times 2.62$ HNBR-MR01-70A O 型圈



OUT680R-1 带GOA114 旋转锁定适配器与长款喷油管
OUT680R-1 with GOA114 Adapter and long injector pipe

其他适配器附带 Other adapter accessory:
 密封用金属垫片或者 PTFE 垫片
 Metal gaskets or PTFE gaskets for sealing



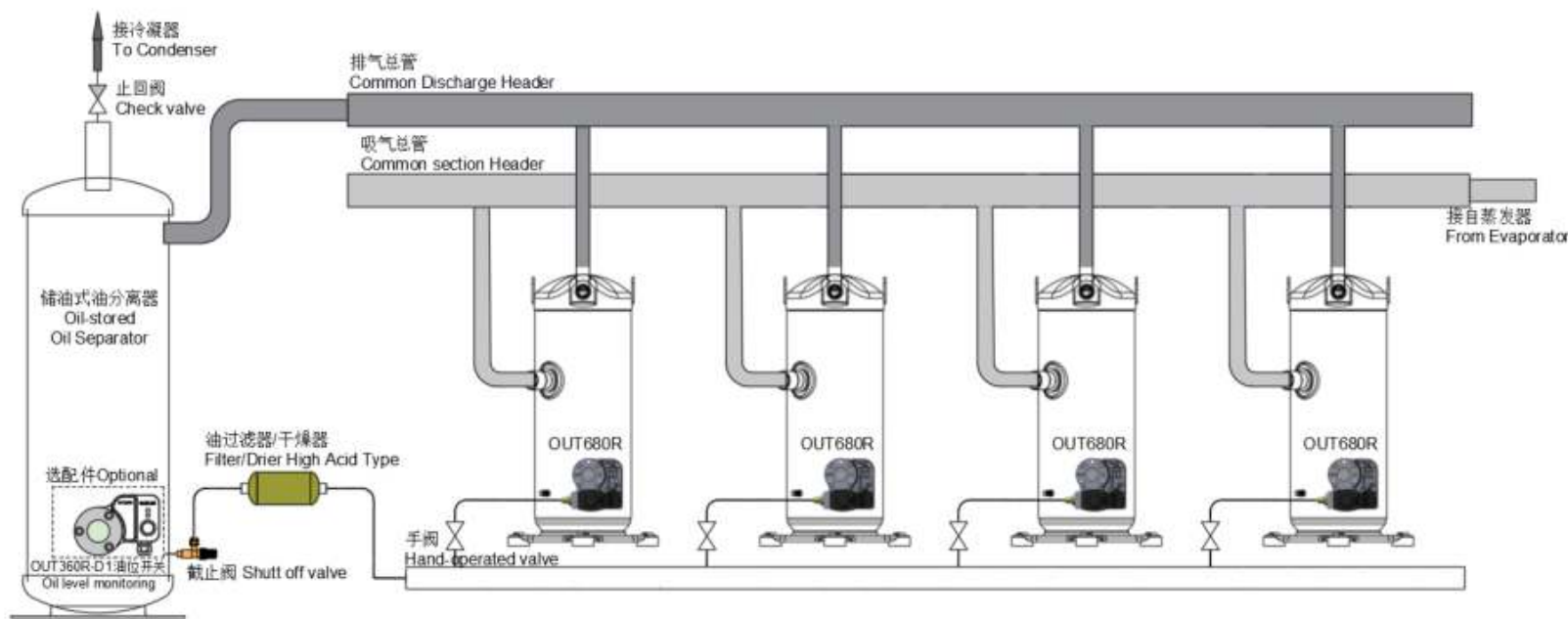
当压缩机油视镜带有挡油板，请选用长款喷油管
 左图 GOA114 旋转锁定适配器，其长款喷油管可以插入艾默生涡旋压缩机油视镜的挡油板的喷油孔。
 When the oil sight glass of the compressor is equipped with an oil deflector, please choose a long oil injection pipe.
 Such as the GOA114 adapter used with it in the left picture, the long injector pipe can be inserted into the hole of the oil deflector of the Emerson scroll compressor oil sight glass.

应用说明 Application Considerations

- 请在储油器或储油式油分安装低油位保护开关（参考 OUT360 摆臂式油位开关），以避免缺油时高压排气旁通短路；
 Must use oil with oil storage type or oil storage, and the outlet must not have a float valve; Check the flexibility of the swing arm to follow the oil level regularly. If the magnetic swing arm float is adsorbed by black grease, please clean it in time.
- 进入电子油位控制前的润滑油不高于 100℃，为了使润滑油得到自然冷却请采用铜管作为供油总管及支管，推荐总管 7/8", 支管 3/8" 变径为 1/4" 再与电子油平衡连接；
 The lubricant temp before entering the electronic level control should not be higher than 100℃, in order to make the lubricant get natural cooling, please use copper pipe for the main supply pipe and branch pipe, recommended main tube 7/8", branch 1/4".
- 供油总管上必须装设 300 目 (50um) 精过滤器，以免杂质进入造成电磁阀卡死漏油；
 A 300-eye (50um) fine filter must be equipped with the main oil supply pipe, to prevent the solenoid valve seat from getting dirty.
- 油路连接口内部带有过滤网，必要时可拆下油路连接口，清洗过滤网；
 There is a filter inside the oil connection port. If necessary, remove the oil connection port and clean the filter.

5. 定期检查摆臂跟随油位的灵活性，发现带磁性的摆臂被黑色油腻吸附时请及时清理。
Periodically check the flexibility of the magnetic float to follow the oil level, if the magnetic float is adsorbed by black grease, please clean it in time.

推荐高压回油系统原理图 Recommended schematic diagram of the high-pressure return oil system



标识 Identification

产品的标签如下：The below images are examples of labels on the product.
生产批号：2526 代表 25 年第 26 周生产



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