

**Unicla<sup>®</sup>**

**The best Hydraulic Drive just got better.**

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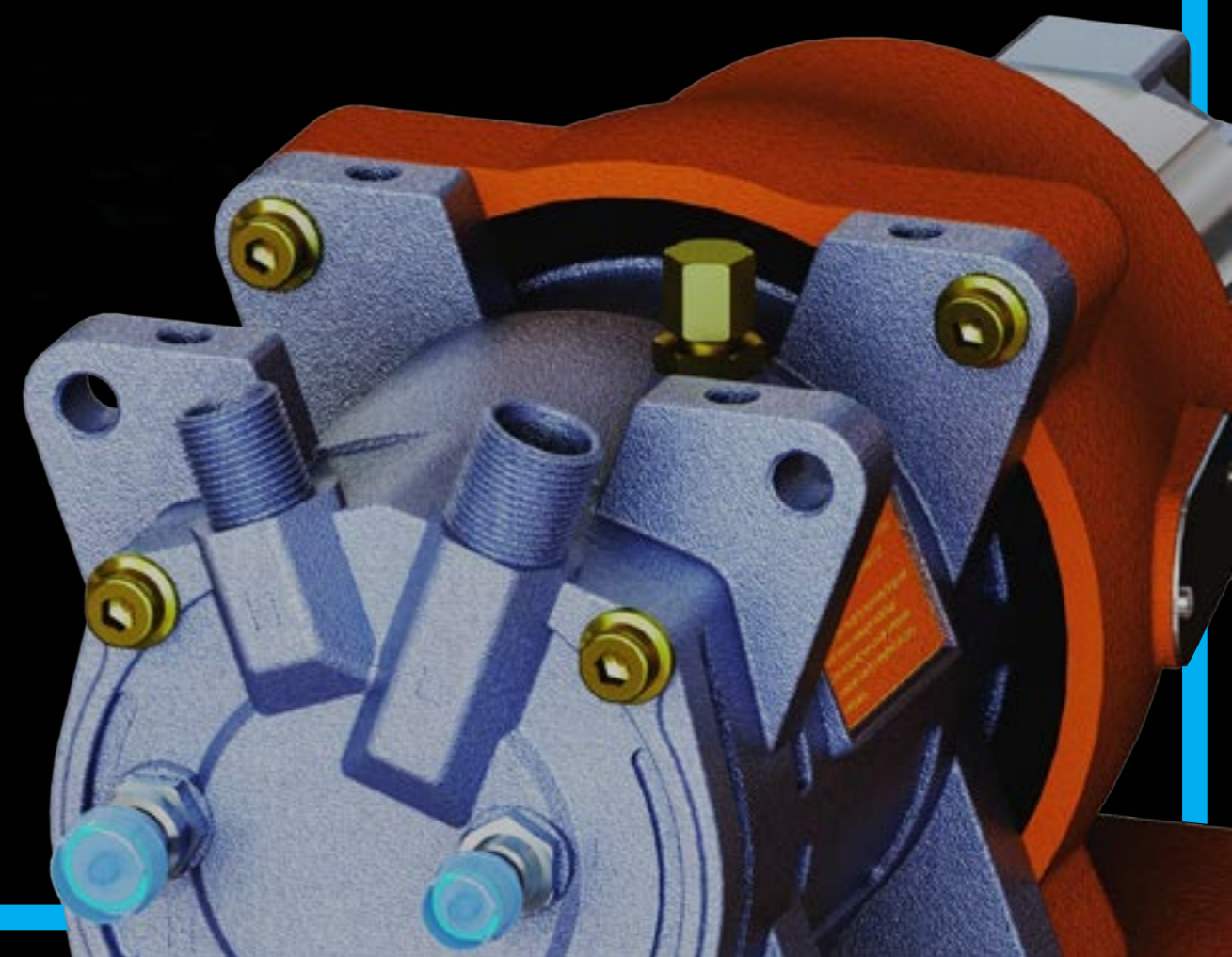
#### IMPORTANT DISCLAIMER

This is a guideline document containing professional information using representative graphs, charts and tables. Manufacturers' specifications must be consulted for specific guidelines and performance data. Unicla published data, specific to all models, is available in promotional literature and from Unicla International Limited on request or through your Unicla supplier.

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# Gen II Hydraulic Drive compressor family. Look no further.

At Unicla, problem solving is in our DNA. Since the 1960's, we've been engineering real-world solutions for real-world problems. Our Generation II Hydraulic Drive compressor family offers a plug-and-play solution for every heavy-equipment asset AC problem. It's exactly what you've been looking for.

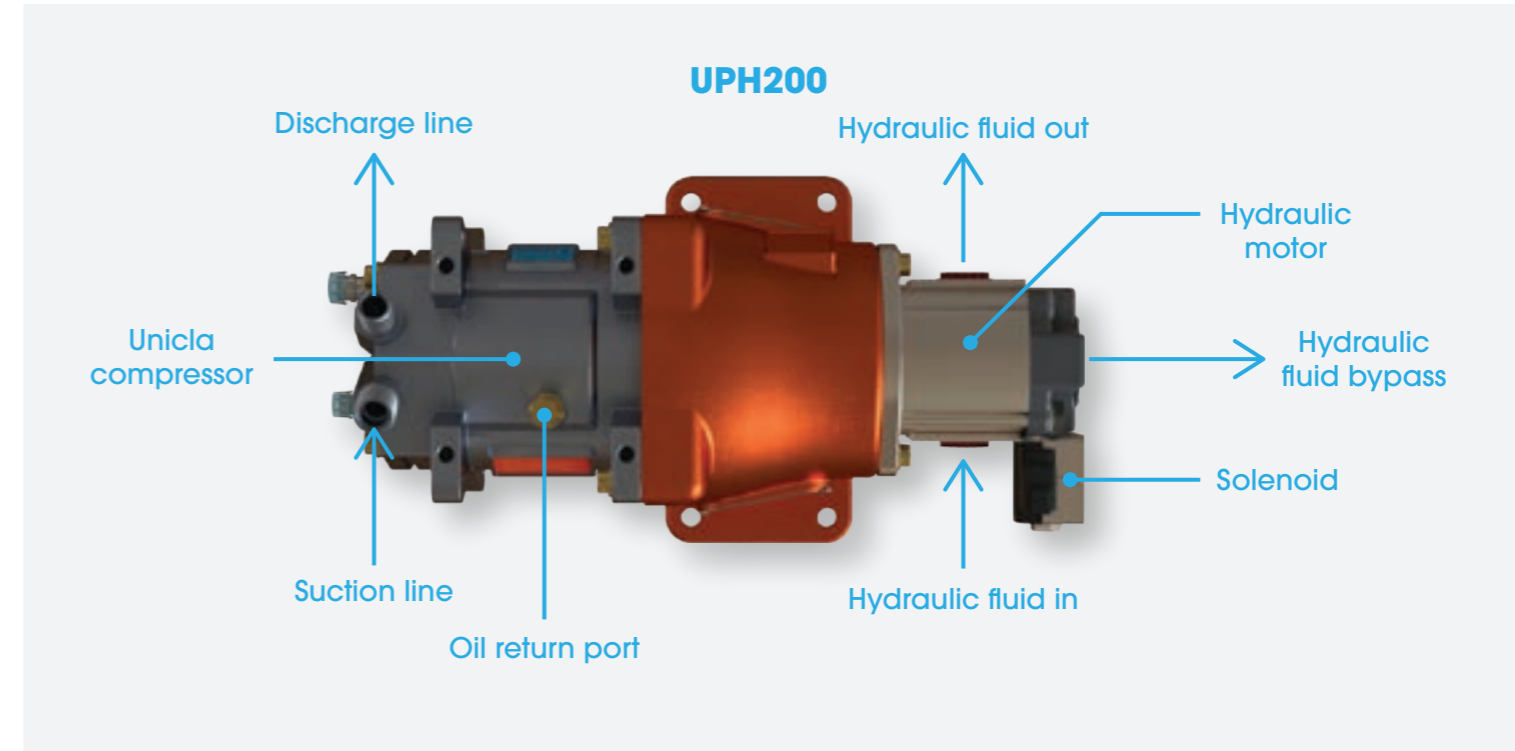
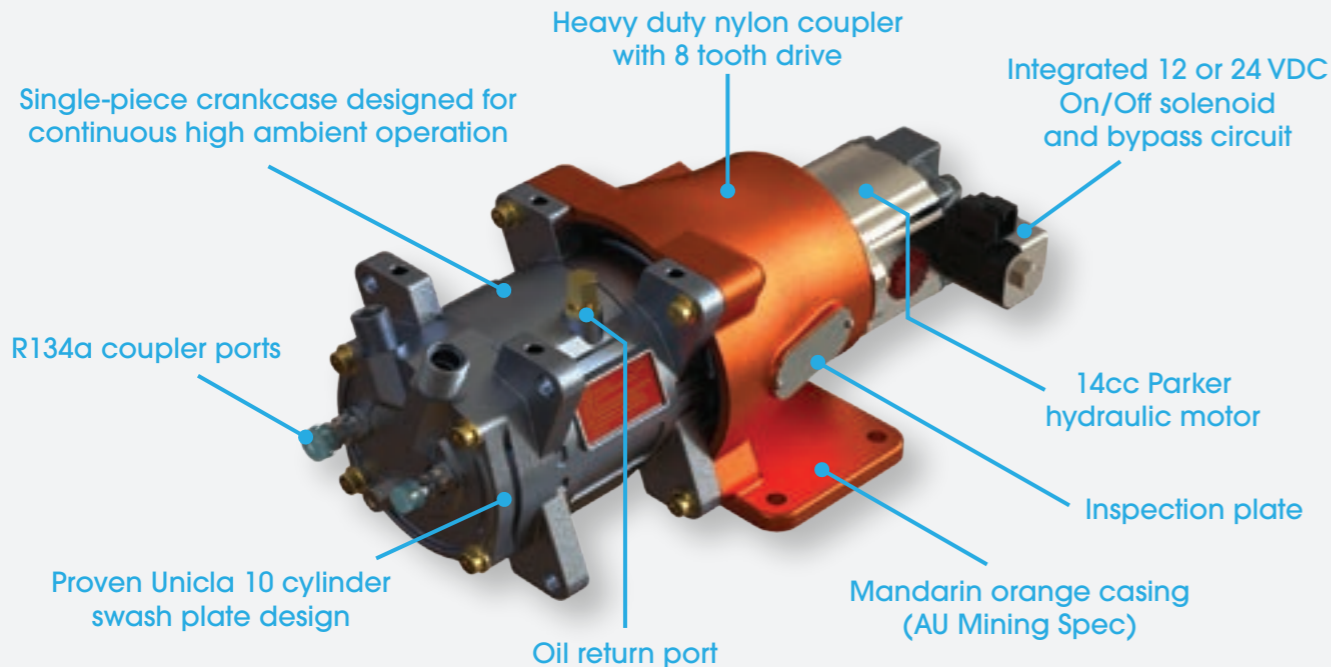


## Engineered for freedom.

### Universal... in any universe.

The Unicla UPH Hydraulic Drive compressors are designed for universal application and freedom of installation. The range can be driven by any 11-15cc hydraulic motor with a standard SAE twin-bolt, A-type mounting configuration, and 5/8" nine-spline shaft.

Featuring four sturdy mounting points integral to the coupler housing, the hydraulic drive compressor assembly allows engineers and technicians the flexibility to locate the unit almost anywhere. The range offers multi-refrigerant compatibility including R134a, R404A, R452A, R1234yf and R513A refrigerants, and boasts three compressor displacement options - 145, 172 and 200cc. Further freedom is achieved through the choice of Vertical or Horizontal #8/#10 O-ring rear cylinder heads.



## Greater than the sum of its parts.

### The package that packs a punch.

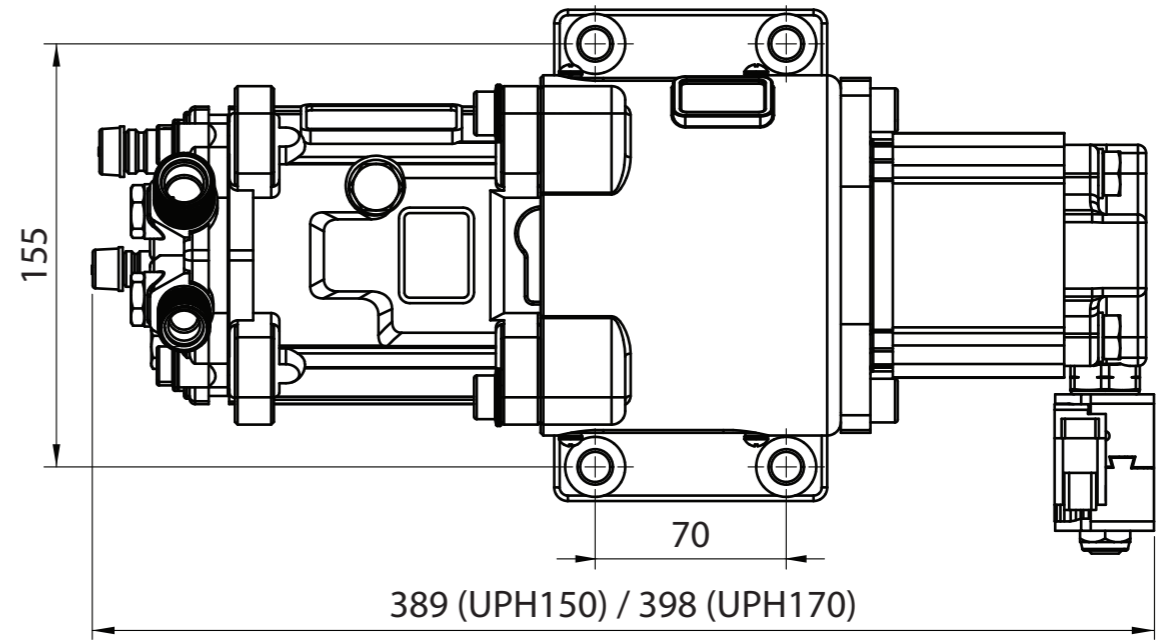
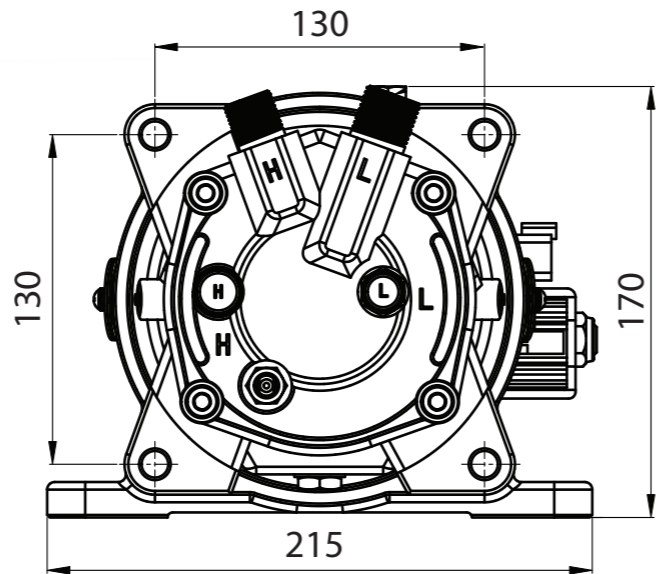
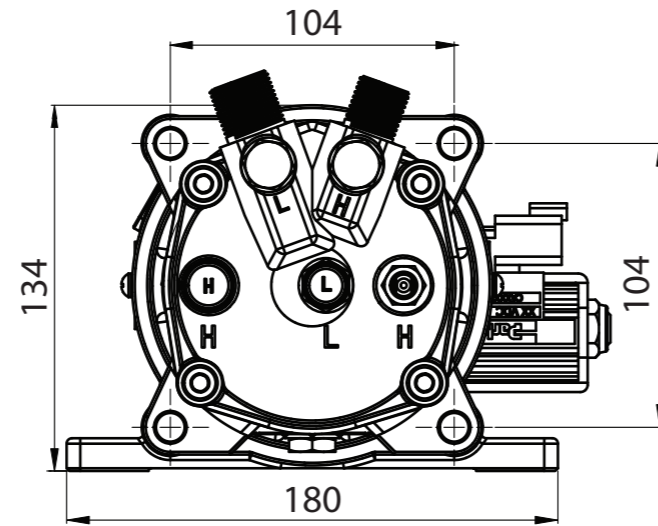
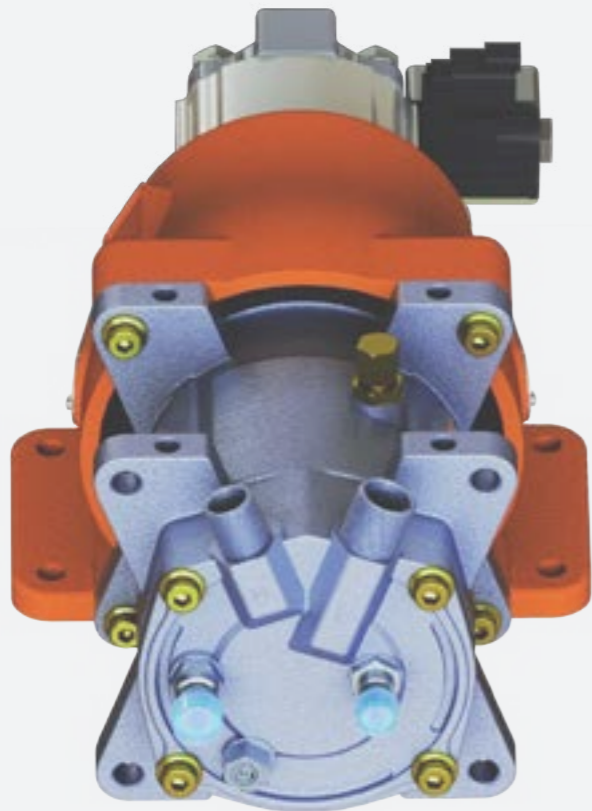
With the enviable power to provide full compressor output while your asset is idling, the Generation II Hydraulic Drive compressor assemblies offer a complete, compact and easy-to-fit solution. The Unicla compressor, drive coupling, housing, and hydraulic motor come pre-assembled and ready to install. The rear cylinder head on all models features low and high-side service ports, and a high-pressure relief valve.

The compressor body includes a 7/16" UNF male flare oil return port, and the hydraulic motor includes both 12V and 24V DC On/Off solenoids with 2-pin female Deutsch plug, and a 2-pin male Deutsch plug with 1 metre of pre-wired harness.

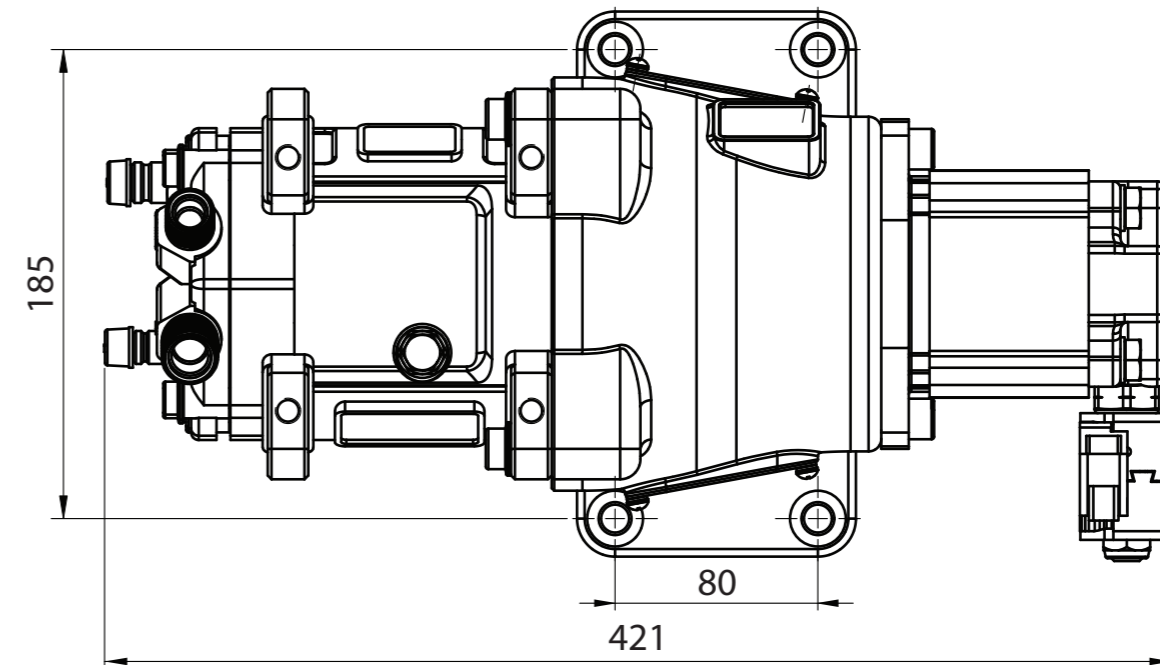
# Unicla Hydraulic Drive Assembly Schematic

The following diagrams show assembly dimensions for the UPH150, UPH170 and UPH200 models.

Note: the cylinder head shown is typical of a Vertical O-ring configuration. Horizontal O-ring configuration will differ.



**UPH150  
& UPH170**



**UPH200**

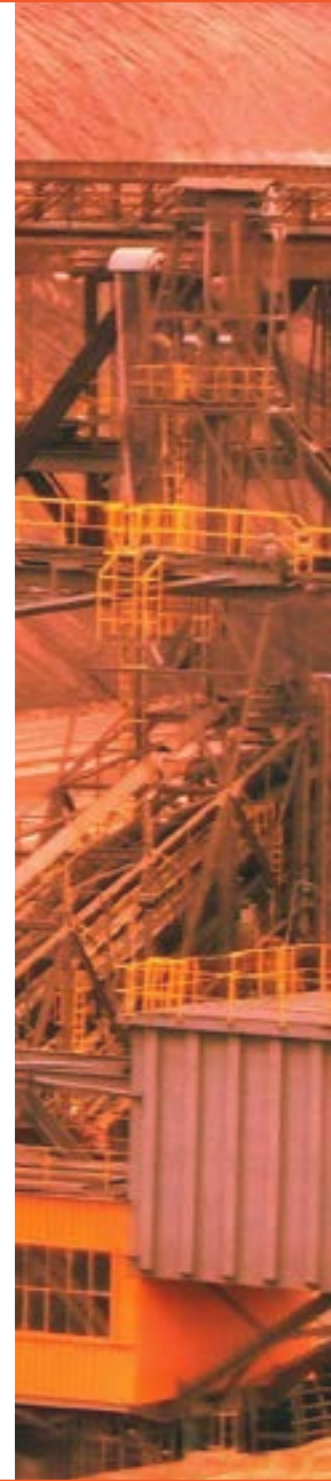
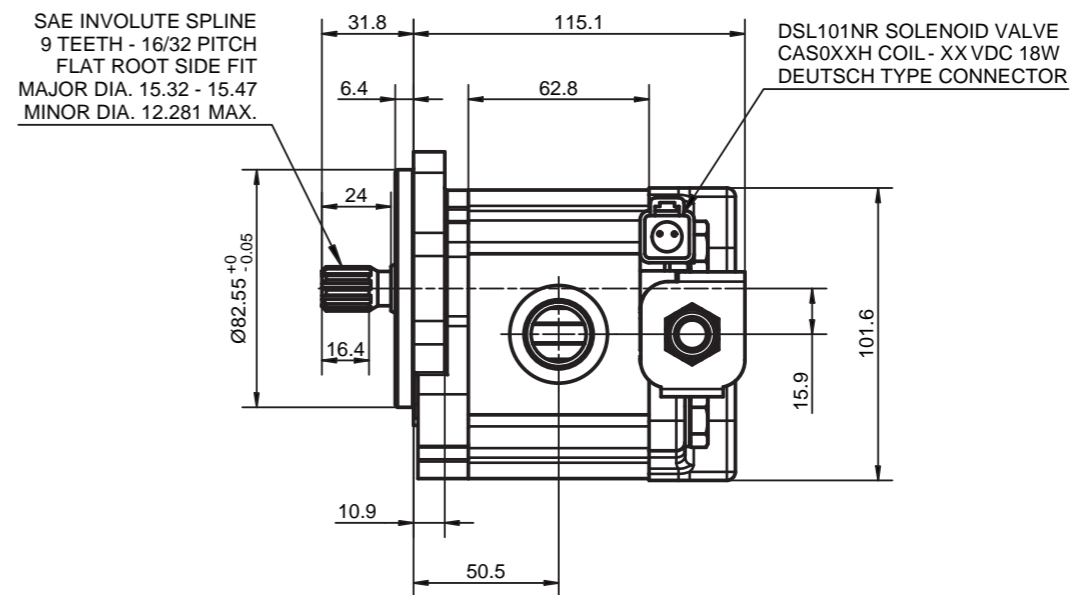
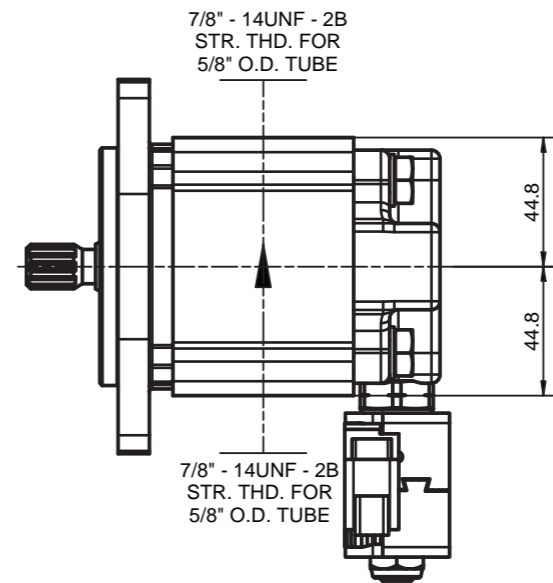
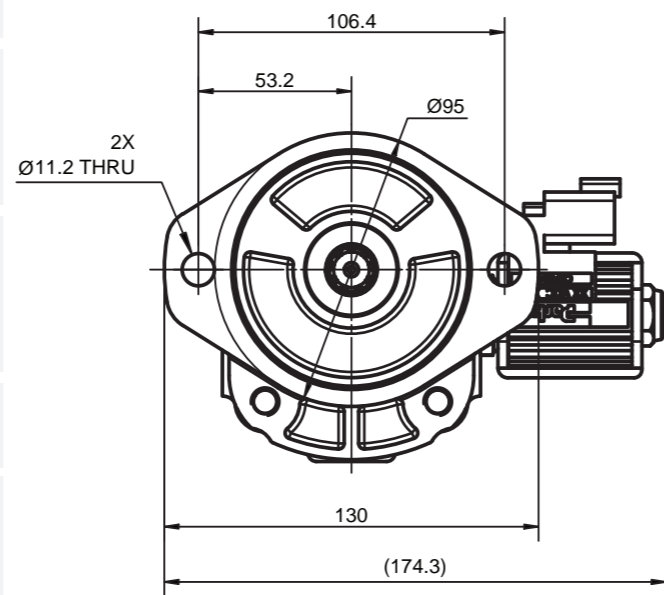


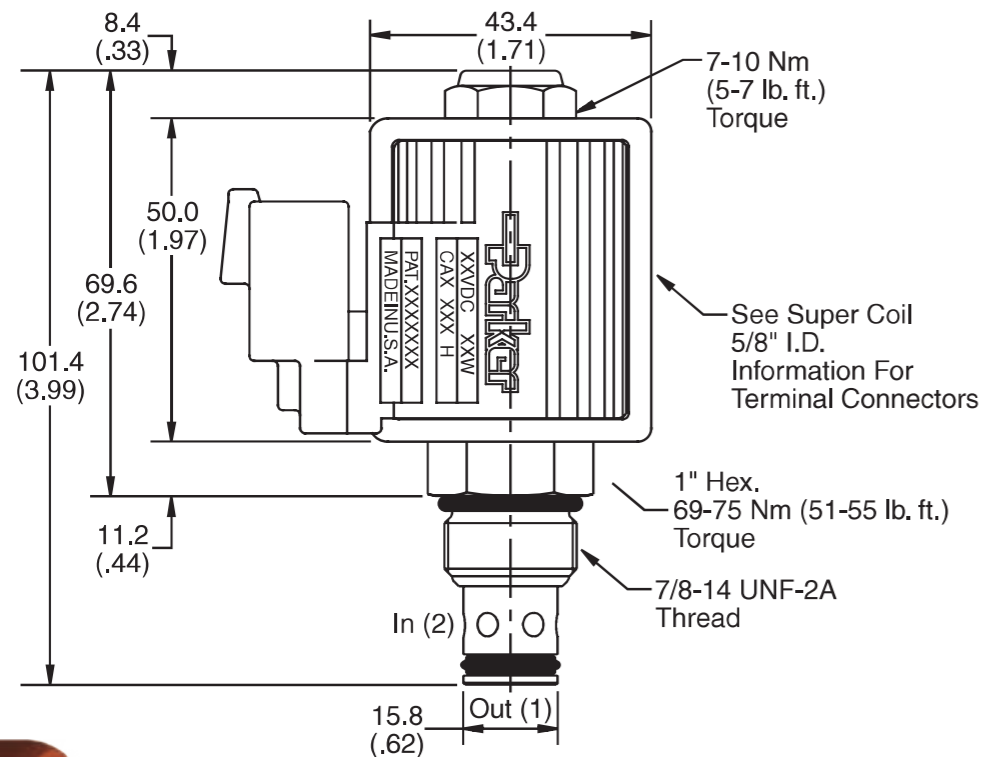
### Hydraulic Motor Specifications

Theoretical Displacement	14.0 cc/rev (0.85 in <sup>3</sup> /rev)
Maximum Continuous Pressure P1	250 bar (3625 psi)
Speed Rate at Pressure P1	500 to 3000 rpm
Rotation when viewed on end of drive shaft	Counter-clockwise
Operating Temperature Range	Continuous -15°C to 80°C Cold Start -20°C Max. Intermittent 100°C
Shaft Seal Type	Single Nitrile
Maximum Shaft Seal / Drain Line Pressure	5 bar (75 psi)

## Hydraulic Motor Assembly Schematic

Unicla Hydraulic Drive Compressor assemblies are supplied fully-assembled, and include a high-performance 14cc hydraulic motor.



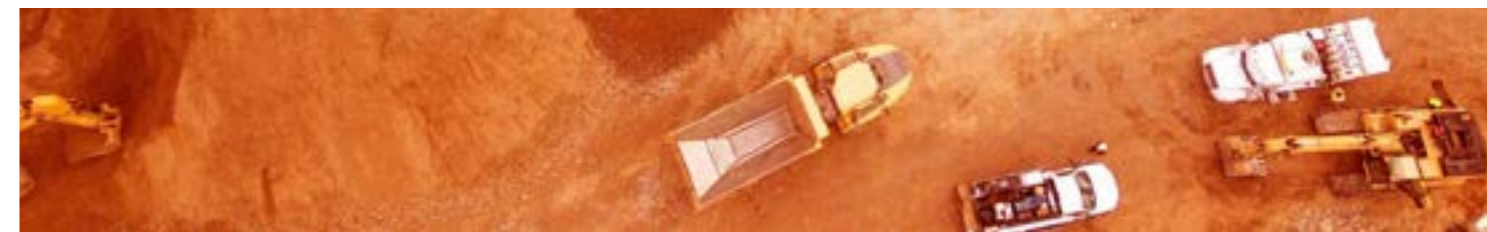


**The Hydraulic Drive provides full compressor operation even while the asset is at idle.**

**Hydraulic connection:** Hydraulic oil flow is allowable in one direction only.

Note: The motor will not function if flow is reversed.

**Port identification:** Refer to the port designation stamped into the motor housing for flow direction confirmation.



## Plug and play. Harness and hydraulics.

Installing the Unicla Hydraulic Drive compressor assembly couldn't be easier.

### Step 1 - Compressor refrigerant hose connection.

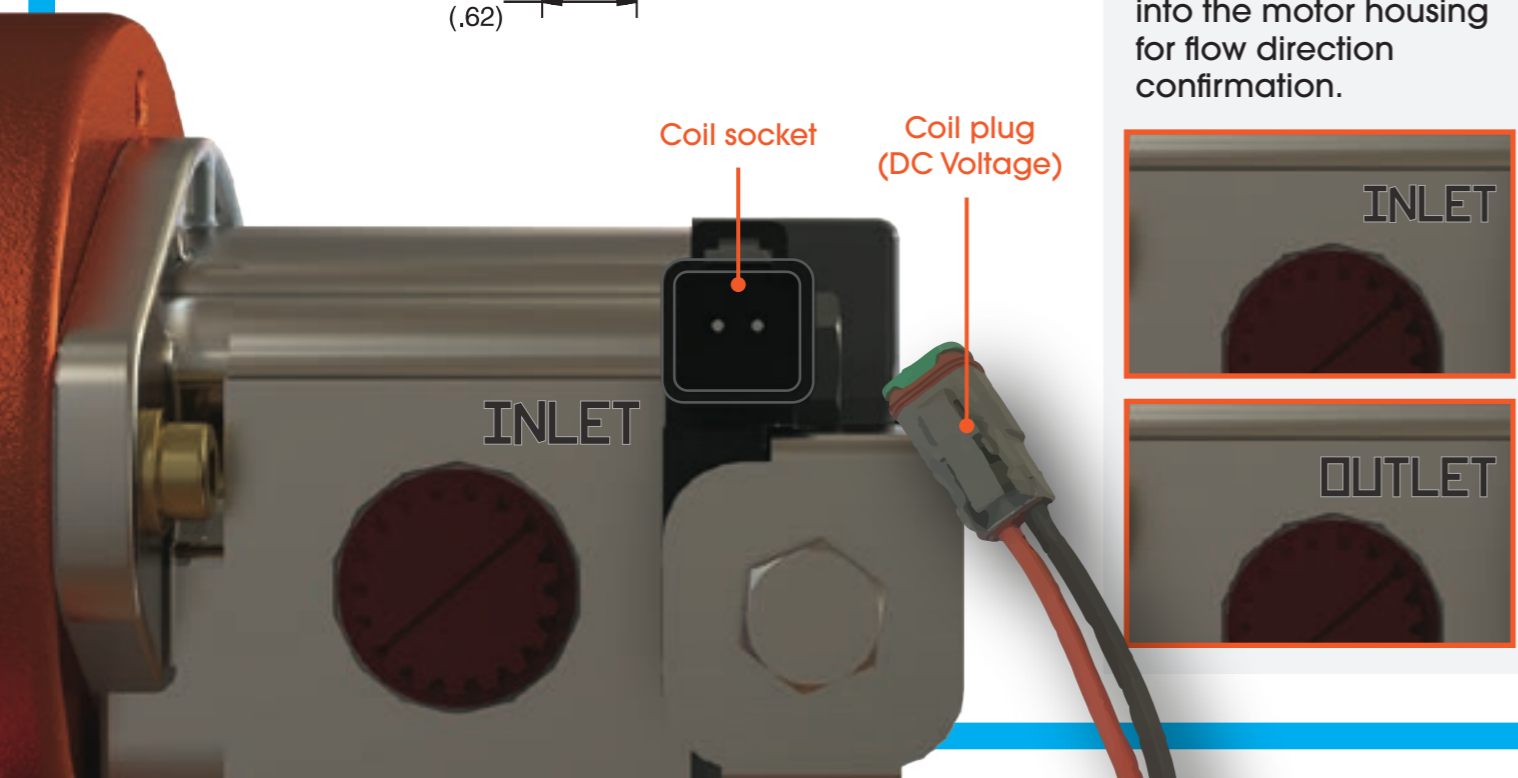
- Ensure fitting threads are clean and free from debris
- Use new O-rings
- Torque fittings to specification
- Connection and system commissioning as per standard AC system guidelines

### Step 2 - Solenoid coil electrical connection.

- On/Off solenoid coil connects directly to original compressor clutch wire feed
- Confirm the correct solenoid coil operating voltage
- Connect the compressor clutch wire feed DC voltage to the supplied lead harness
- Carefully insert the plug noting the alignment of the retention clip with the socket
- The presence of DC voltage to the harness allows hydraulic pressure to be supplied to the motor (motor run state)
- The absence of DC voltage directs the hydraulic flow to the bypass port (motor stopped state)
- Solenoid coil is not polarity dependant

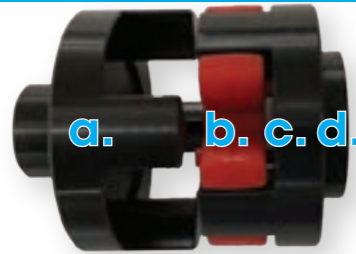
### Step 3 - Hydraulic hose connection to hydraulic motor.

- Connect hydraulic inlet
- Connect hydraulic outlet
- Connect hydraulic bypass
- Hydraulic oil flow is directional - the motor will not function if flow direction is reversed



### 1. Coupling Part # 27203-000180

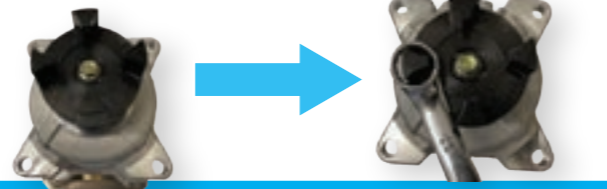
- a. Coupling connector A
- b. Elastic cushion
- c. Coupling connector B
- d. Screw (M5 x L10)



### 2. Installing coupling connector A

Insert coupling connector A into compressor

Tighten bolt (M6 x L18) to 14.7 N·m



### 5. Tighten with screw (M5)

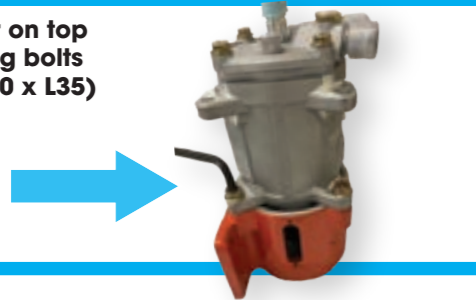


### 6. Install cushion to connector A



### 3. Tighten compressor and coupling housing

Fix compressor on top of housing using bolts supplied (4 M10 x L35)



### 4. Installing coupling connector B

Fix coupling connector B to hydraulic motor shaft.

**Important:** Ensure the air gap between connector A and B is 1.00mm (+/- 0.5mm). Due to machining tolerances, the connector B position on hydraulic motor shaft will vary. As a starting point, position connector B, 42mm (+/- 1.0mm) from connector end to motor face.



### 7. Install hydraulic motor to motor housing using bolts (2 M10 - not supplied)



### 8. Ensure airgap is 1.00mm (+/- 0.5mm) between connector A and B on both sides



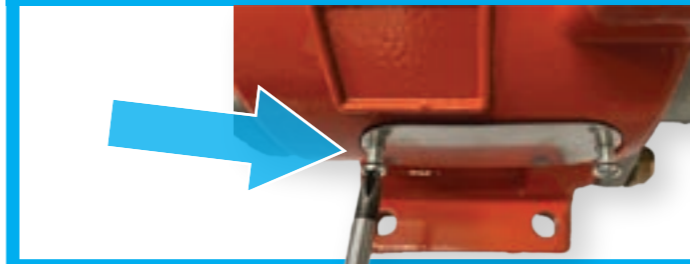
## The Ten-Point plan.

### Easy assembly, service or repair. Anywhere.

The Unicla Hydraulic Drive compressor assembly is designed for easy service and maintenance in the field. Using common hand tools, this Ten-Point plan provides the correct procedure for building a complete assembly from individual components. Ensure the tolerances relating to the coupling are within specification, and the complete assembly will provide long-lasting, reliable service.

For detailed information about Unicla recommendations on fitting compressors in special applications, measuring compressor thermal and pressure loads, and calculating extra oil requirements in larger systems, we recommend you visit our website where expert advice from Unicla engineers can be found: [www.unicla.hk](http://www.unicla.hk)

### 9. Install inspection plate



### 10. Complete assembly



# The whole family is here.

## And every one of them is a hard worker.

Choose the capacity. Choose the oil. Choose the cylinder head.

Choose Unicla Hydraulic Drive.

The Generation II family provides a diverse range of compressor assemblies to cater for every conceivable application required by the mining, agricultural, transport, and earth moving industries. Decades of engineering rigour have produced a best-in-class product, validated by exhaustive testing in our world-class environmental test chamber.

No matter the problem, we have the solution. The choice is yours.

r.p.m	Hydraulic oil flow rate (LPM)	Compressor Model	Cooling Capacity 0°C EST/ 50°C CST (kW)	Cooling Capacity 5°C EST/ 50°C CST (kW)
1250	17.5	UPH150	4.5	5.7
		UPH170	5.3	6.7
		UPH200	6.1	7.8
1750	24.5	UPH150	6.0	7.6
		UPH170	7.1	9.0
		UPH200	8.2	10.5
2250	31.5	UPH150	7.3	9.3
		UPH170	8.6	11.0
		UPH200	10.0	12.8



Part No. UPH150-10030 – UP150 PAG HOR/MFP, 14cc Parker motor, 12&24v solenoid  
 Part No. UPH150-10040 – UP150 PAG VOR/MFP, 14cc Parker motor, 12&24v solenoid  
 Part No. UPH150-20030 – UP150 POE HOR/MFP, 14cc Parker motor, 12&24v solenoid  
 Part No. UPH150-20040 – UP150 POE VOR/MFP, 14cc Parker motor, 12&24v solenoid



Part No. UPH170-10030 – UP170 PAG HOR/MFP, 14cc Parker motor, 12&24v solenoid  
 Part No. UPH170-10040 – UP170 PAG VOR/MFP, 14cc Parker motor, 12&24v solenoid  
 Part No. UPH170-20030 – UP170 POE HOR/MFP, 14cc Parker motor, 12&24v solenoid  
 Part No. UPH170-20040 – UP170 POE VOR/MFP, 14cc Parker motor, 12&24v solenoid



Part No. UPH200-10030 – UP200 PAG HOR/MFP, 14cc Parker motor, 12&24v solenoid  
 Part No. UPH200-10040 – UP200 PAG VOR/MFP, 14cc Parker motor, 12&24v solenoid  
 Part No. UPH200-20030 – UP200 POE HOR/MFP, 14cc Parker motor, 12&24v solenoid  
 Part No. UPH200-20040 – UP200 POE VOR/MFP, 14cc Parker motor, 12&24v solenoid



Part No. 27203-000180 – UPH 8T coupling - 150/170/200 series



Part No. 32301-000750 – UPH Casing, bolt kit & plate - 150/170 series  
 Part No. 32301-000760 – UPH Casing, bolt kit & plate - 200 series



Part No. AU340002 – Hydraulic drive 14cc Parker motor with valve stem



Part No. AU34-12V – 12V Solenoid suit 14cc Parker motor (18W 2-pin)  
 Part No. AU34-24V – 24V Solenoid suit 14cc Parker motor (18W 2-pin)



Part No. AU34-SH – Solenoid harness (1m) suit 14cc Parker motor (2-pin)



# Unicla<sup>®</sup>

## Help is here.

Our team is standing by to lend a hand.

**Unicla Australia**

*A Division of SuperCool Group*

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