

**ADJUSTABLE UNLOADER** with inner stainless steel parts and fitted with a check valve that ensures reliability and nozzles protection (lance nozzle and chemical ejector). Zero pressure in by-pass condition. Detergent ejector.

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### HIGHLY EFFICIENT STAINLESS STEEL inlet and delivery valves, corrosion-proof

### THERMAL VALVE

on request

### FORGED BRASS HEAD

with high mechanical resistance and corrosion-proof

**COATED CERAMIC OR SPECIAL STAINLESS STEEL PISTONS** with great resistance to corrosion and abrasion.





HIGH QUALITY DOUBLE SEALING SYSTEM

Aluminum die-cast CRANKCASE WITH FINS

that grant optimal oil temperature

**5/8" HOLLOW SHAFT WITH FLANGE** for coupling to Nema 56C electric motor

### **INTERNAL KINEMATISM**

with high quality ball bearings that guarantee relibility in time and a optimum response at high revolution per minute.















**ADJUSTABLE UNLOADER** with inner stainless steel parts and fitted with a check valve that ensures reliability and nozzles protection (lance nozzle and chemical ejector). Zero pressure in by-pass condition. Detergent ejector.

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HIGHLY EFFICIENT STAINLESS STEEL inlet and delivery valves, corrosion-proof

### FORGED BRASS HEAD

with high mechanical resistance and corrosion-proof



# that allow the motor to start in any condition

**EASY-START SYSTEM** 

### **INTERNAL KINEMATISM**

with high quality ball bearings that guarantee relibility in time and a optimum response at high revolution per minute.



### HIGH QUALITY DOUBLE SEALING SYSTEM

### **CRANKCASE COMPLETE WITH FINS**

for low oil temperature. Made of die-cast aluminum alloy anodized for surface protection

5/8" HOLLOW SHAFT with BUILT-IN-KEY and with FLANGE for coupling to Nema 56 C electric motor









ADJUSTABLE UNLOADER with inner stainless steel parts and fitted with a check valve that ensures reliability and nozzles protection (lance nozzle and chemical ejector). Zero pressure in by-pass condition. Detergent ejector.

### HIGHLY EFFICIENT STAINLESS STEEL

inlet and delivery valves, corrosion-proof.

### FORGED BRASS HEAD

with high mechanical resistance and corrosion-proof.



### INTERNAL KINEMATISM

EASY-START SYSTEM

that allow the motor to start in any condition

with high quality ball bearings that guarantee reliability in time and a optimum response at high revolution per minute.



### HIGH QUALITY DOUBLE SEALING SYSTEM

### **CRANKCASE COMPLETE WITH FINS**

for low oil temperature. Made of die-cast aluminum alloy anodized for surface protection



3/4" STEEL HOLLOW SHAFT with BUILT-IN-KEY and with FLANGE for coupling to petrol engine









**ADJUSTABLE UNLOADER** with inner stainless steel parts and fitted with a check valve that ensures reliability and nozzles protection (lance nozzle and chemical ejector). Zero pressure in bypass condition. Detergent ejector.

### FORGED BRASS HEAD

with high mechanical resistance and corrosion-proof

### **HIGHLY EFFICIENT STAINLESS STEEL**

inlet and delivery valves, corrosion-proof





### **CERAMIC COATED PLUNGERS**

highly corrosion and abrasion-proof



### **CRANKCASE COMPLETE WITH FINS**

for low oil temperature. Made of die-cast aluminum alloy anodized for surface protection

### O-RING OIL SEAL SYSTEM

system between crankcase and rear cover

### FORGED CONRODS

connecting rods are one piece aluminum or bronze alloy which granlong durability

**INTERNAL KINEMATISM** with high quality oversized bearings

that ensure long durability

### **1" HOLLOW SHAFT WITH FLANGE**

for coupling to petrol engines

HIGH QUALITY DOUBLE SEALING SYSTEM









**ADJUSTABLE UNLOADER** with inner stainless steel parts and fitted with a check valve that ensures reliability and nozzles protection (lance nozzle and chemical ejector). Zero pressure in by-pass condition. Detergent ejector.

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**HIGHLY EFFICIENT STAINLESS STEEL** 

inlet and delivery valves, corrosion-proof

THERMAL VALVE on request

FORGED BRASS HEAD

with high mechanical resistance and corrosion-proof



### **INTERNAL KINEMATISM**

with high quality ball bearings that guarantee relibility in time and a optimum response at high revolution per minute.



HIGH QUALITY **DOUBLE SEALING SYSTEM** 

Aluminum die-cast **CRANKCASE WITH FINS** that grant optimal oil temperature

3/4" HOLLOW SHAFT WITH FLANGE

for coupling to petrol engines









### **ADJUSTABLE UNLOADER**

with inner stainless steel parts and fitted with a check valve that ensures reliability and nozzles protection (lance nozzle and chemical ejector). Zero pressure in bypass condition. Detergent ejector.

### FORGED BRASS HEAD

with high mechanical resistance and corrosion-proof.

### **HIGHLY EFFICIENT STAINLESS STEEL**

inlet and delivery valves, corrosion-proof.







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### **REVERSIBLE CRANKCASE COMPLETE**

WITH FINS for low oil temperature. Made of die-cast aluminum alloy, anodized for surface protection

### **O-RING OIL SEAL SYSTEM**

between crankcase and rear cover

### FORGED CONRODS

connecting rods are one piece aluminum alloy which granlong durability

### INTERNAL KINEMATISM

with high quality oversized bearings that ensure long durability

5/8" HOLLOW SHAFT
 with FLANGE for coupling
 to Nema 56 C electric motor

3/4" or 1" HOLLOW SHAFT
 with FLANGE for coupling
 to petrol engines











### **STAINLESS STEEL HARDENED PISTONS GUIDE** . . . . . . . . . . . . . . . . . . .

### FORGED BRASS HEAD

with high mechanical resistance and corrosion-proof.

### HIGHLY EFFICIENT STAINLESS STEEL

inlet and delivery valves, corrosion-proof.



### **SOLID CERAMIC PLUNGERS**

highly corrosion and abrasion-proof.





### **REVERSIBLE CRANKCASE COMPLETE**

WITH FINS for low oil temperature. Made of die-cast aluminum alloy, anodized for surface protection 

### between crankcase and real

### FORGED CONRODS

connecting rods are one piece aluminum or bronze alloy which granlong durability

### INTERNAL KINEMATISM

with high quality oversized bearings that ensure long durability

- Ø24 SOLID SHAFT for coupling to pulley or hollow-shaft electric motor Ø24 or Ø28 HOLLOW SHAFT WITH
- **FLANGE** for coupling to MEC electric motors > 5/8" HOLLOW SHAFT WITH FLANGE for coupling to Nema 56C electric motor
- > 3/4" HOLLOW SHAFT WITH FLANGE for coupling to petrol engines
- **Ø20 HOLLOW SHAFT WITH FLANGE** for coupling to petrol engines with reduction gear











### STAINLESS STEEL HARDENED PISTONS GUIDE

FORGED BRASS HEAD

with high mechanical resistance and corrosion-proof.

HIGHLY EFFICIENT STAINLESS STEEL inlet and delivery valves, corrosion-proof.

### **REVERSIBLE CRANKCASE COMPLETE WITH FINS**

for low oil temperature. Made of die-cast aluminum alloy anodized for surface protection

**SOLID CERAMIC PLUNGERS** highly corrosion and abrasion-proof.



### O-RING OIL SEAL SYSTEM

system between crankcase and rear cover

### FORGED CONRODS

connecting rods are one piece aluminum or bronze alloy which granlong durability

### INTERNAL KINEMATISM

with high quality oversized bearings that ensure long durability

- Ø24 SOLID SHAFT for coupling to pulley or hollow-shaft electric motor
- Ø28 HOLLOW SHAFT WITH FLANGE
  for coupling to MEC electric motors.
  3/4" or 1" HOLLOW SHAFT WITH FLANGE

for coupling to petrol engines.

HIGH QUALITY DOUBLE SEALING SYSTEM









**ADJUSTABLE UNLOADER** with inner stainless steel parts and fitted with a check valve that ensures reliability and nozzles protection (lance nozzle and chemical ejector). Zero pressure in bypass condition. Fixed and adjustable detergent ejector.

**EASY-START SYSTEM** that allow the motor to start in any condition (on ZW-K and ZWD-K 3540-4040)

FORGED BRASS HEAD

with high mechanical resistance and corrosion-proof

HIGHLY EFFICIENT STAINLESS STEEL

inlet and delivery valves, corrosion-proof





**SOLID CERAMIC PLUNGERS** highly corrosion and abrasion-proof





### **STAINLESS STEEL HARDENED**

### **REVERSIBLE CRANKCASE COMPLETE WITH FINS**

for low oil temperature. Made of die-cast aluminum alloy anodized for surface protection

### O-RING OIL SEAL SYSTEM

system between crankcase and rear cover

### FORGED CONRODS

connecting rods are one piece aluminum or bronze alloy which granlong durability

### INTERNAL KINEMATISM

with high quality oversized bearings that ensure long durability

• Ø 24 SOLID SHAFT, for coupling to pulley, or hollow-shaft electric motor

> 1" HOLLOW SHAFT WITH FLANGE for coupling to petrol engines

HIGH QUALITY DOUBLE SEALING SYSTEM









### INTERCHANGEABILITY of dimensions and couplings with FW and HW pumps

### **STAINLESS-STEEL HARDENED PISTONS GUIDE** (in common with FW and HW pumps)



LARGE SUPPORT SURFACE of gasket rings on crankcase

### FORGED BRASS HEAD

with high mechanical resistance and corrosion-proof (in common with FW and HW pumps)

### **HIGHLY EFFICIENT**

**CHECK VALVES** in stainless steel (in common with the FW and HW pumps)

### **DOUBLE V-SHAPED BUNA-TEXTILE SEALS**

(for high and low pressure) with intermediate lubrication and drip recovery (in common with the FW and HW pumps)



### **REVERSIBLE CRANKCASE COMPLETE WITH FINS** for low oil temperature. Made of die-cast aluminium alloy, anodized for surface protection

• Ø24 SOLID SHAFT for coupling to pulley, to reduction gear or hollow-shaft electric motor • 1" HOLLOW SHAFT WITH FLANGE for coupling to petrol engines • 1"1/8 HOLLOW SHAFT WITH FLANGE for coupling to Nema 182-184TC electric motor • Ø25 HOLLOW SHAFT WITH FLANGE for coupling to petrol engine with reduction gear SHAFTS IN COMMON with the RW pumps



**O-RING OIL SEAL SYSTEM** 

between crankcase and rear cover

Bronze-alloy **CONRODS** made in a single piece (in common with the FW and HW pumps)



Top-quality and oversized **CONICAL ROLLER BEARINGS** with **COVERS** for adjusting the pre-load (in common with the RW pumps)









### **STAINLESS STEEL HARDENED PISTONS GUIDE**

### **CRANKCASE COMPLETE WITH FINS**

alloy anodized for surface protection

### FORGED BRASS HEAD with high mechanical resistance and corrosion-proof.

### **HIGHLY EFFICIENT STAINLESS**

STEEL inlet and delivery valves, corrosion-proof.

### **EXCLUSIVE PACKAGING SYSTEM**

High pressure seals: high quality self lubricating Braided Graphite Packings

› Low pressure seals: special buna-textile Packings with Anti-extrusion rings



## **CONNECTING RODS** are one piece broze alloy for low oil temperature. Made of die-cast aluminum

### **EXCLUSIVE COUPLING SYSTEM BETWEEN PUMP** HEAD AND CRANKCASE

it prevents dust and dirt from penetrating the area where pistons work, but allows water to exit

### O-RING OIL SEAL SYSTEM

system between crankcase and rear cover

Top-quality and oversized **CONICAL ROLLER BEARINGS** with **COVERS** for adjusting the pre-load

### **DOUBLE** oil level **VIEWER**



- Ø24 SOLID SHAFT for coupling to pulley or hollow-shaft electric motor
- > 1" 1/8" HOLLOW SHAFT WITH FLANGE for coupling to Nema 182-184 TC electric motor > Ø25 HOLLOW SHAFT WITH FLANGE for
- coupling to petrol engines with reduction gear

### EXCLUSIVE CRANKCASE OIL SEALING SYSTEM

it minimizes the wearing on pistons: > Wearable area Oil seal working area



**SOLID CERAMIC PLUNGERS** highly corrosion and abrasion-proof.







![](_page_11_Picture_1.jpeg)

**INCAPSULATED VALVE SEAT WITH O-RING AND ANTI-EXTRUCTION** for models TW with pressure starting from 275 bar / 4000 p.s.i

![](_page_11_Picture_4.jpeg)

### **VALVE CAPS**

have recessed the O-Ring turner into the pump head and reinforced it with an anti-extrusion ring to prevent the O-Ring from extruding under very high pressure (TW)

### **CHECK VALVES**

are stainless steel with highly efficient design

**PISTONS** made of solid ceramic

### **EXCLUSIVE COUPLING SYSTEM BETWEEN** PUMP HEAD AND CRANKCASE

It prevents dust and dirt from penetrating the area where pistons work, but allows water to exit (PATENT PENDING)

![](_page_11_Picture_12.jpeg)

System to allow water to exit System to prevent penetration of dust and dirt

![](_page_11_Picture_14.jpeg)

### **CRANKCASE: DIE CAST ALUMINIUM ALLOY** anodized for protection against corrosion

![](_page_11_Picture_17.jpeg)

### **EXCLUSIVE PACKING SYSTEM**

**OIL VENTED DIPSTICK** 

New self lubricating double packing design with special bunatexile seals and bronze rings for an exceptional packing life

![](_page_11_Picture_20.jpeg)

### CRANKCASE COMPLETELY SURROUNDED

by large fins for an efficient oil cooling for drastic reduction of operating temperature

### **O-RING SEALING SYSTEM**

between crankcase and back cover

All sight **GLASSES** 

### **CONNECTING RODS**

are one piece bronze alloy

![](_page_11_Picture_28.jpeg)

Specific models fit 2 pieces high resistance alluminium alloy rods

### BEARINGS

are oversized, premium quality tapered roller bearings

### Ø24 SOLID SHAFT

for electric motor or gearbox application

### **PISTON GUIDES**

are heat treated stainless steel

![](_page_11_Picture_36.jpeg)

**EXCLUSIVE CRANKCASE OIL SEALING SYSTEM** It minimizes the wearing on pistons oil seals (PATENT PENDING) oil seals working area wearable area

![](_page_11_Picture_39.jpeg)

![](_page_11_Picture_40.jpeg)

![](_page_12_Picture_0.jpeg)

**CRANKCASE COMPLETE WITH FINS** for low oil temperature. Made of die-cast aluminium alloy, anodized for surface protection

**DELIVERY VALVES PLUG** . . . . . . . . . . . . . . . . .

FORGED BRASS HEAD with high mechanical resistance and corrosion-proof

**REMOVABLE SUCTION MANIFOLD** 

for easy check valves inspection

### **HIGHLY EFFICIENT STAINLESS**

**STEEL** inlet and delivery valves corrosion-proof

### **EXCLUSIVE PACKAGING SYSTEM**

> High pressure seals: high quality self Iubricating Braided Graphite Packings

Low pressure seals: special buna-textile Packings with Anti-extrusion rings

![](_page_12_Picture_12.jpeg)

![](_page_12_Picture_13.jpeg)

### **EXCLUSIVE COUPLING SYSTEM BETWEEN PUMP** HEAD AND CRANKCASE

it prevents dust and dirt from penetrating the area where pistons work, but allows water to exit

### O-RING OIL SEAL SYSTEM

between crankcase and rear cover

### SPECIAL ALUMINIUM ALLOY

conrods made in a double piece

### **OIL LEVEL VIEWER**

Top-quality and oversized **CONICAL ROLLER BEARINGS** with **COVERS** for adjusting the pre-load

### Ø 24-30 SOLID SHAFT for coupling to pulley, to reduction gear or hollow-shaft electric motor

### EXCLUSIVE CRANKCASE OIL SEALING SYSTEM

it minimizes the wearing on pistons: > Wearable area

Oil seal working area

**SOLID CERAMIC PLUNGERS** 

highly corrosion and abrasion-proof

![](_page_12_Picture_29.jpeg)

![](_page_12_Picture_30.jpeg)