Hydroven

MOTOR-PUMP UNITS

A MEMBER OF INTERPUMP GROUP

EN ISO 9001 CERTIFIED QUALITY SYSTEM

A MEMBER OF INTERPUMP HYDRAULICS

CONTENT

INSTRUCTIONS FOR USE

The following precautions must be strictly observed.

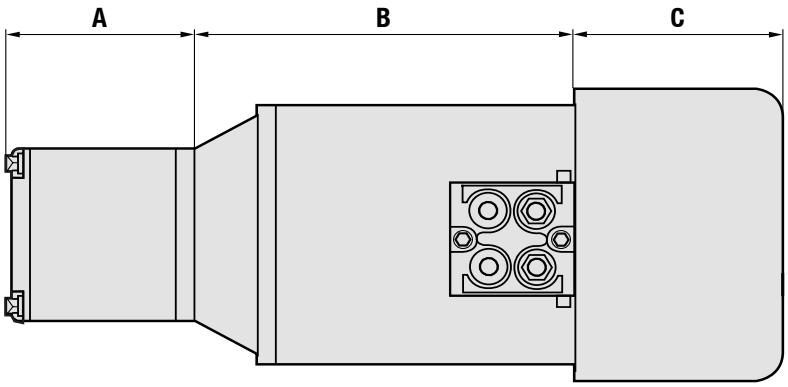
- Do not make any alterations which may effect the safety of this motor–pump unit.
- During the test, fix the motor–pump unit, (as reported on mechanical connection paragraph) and after having made the electric connections keep tools, electric cables, inflammables, or other materials away from the motor–pump unit.
- Before testing the motor–pump unit, disconnect the electrical circuit. The use of higher power than that shown on the label, is dangerous. For correct use, follow the instructions of the manufacturer; all persons involved in testing, mounting, use and maintenence, should read this manual in advance.

HYDROVEN do not accept responsibility for any problems resulting from: incorrect transport; handling and storage; incorrect installation; incorrect use; tampering; incorrect maintenence.

Do not disperse any parts of this product.

For any other information not referred to in this manual, always refer to the manufacturer.

TRANSPORT AND STORAGE

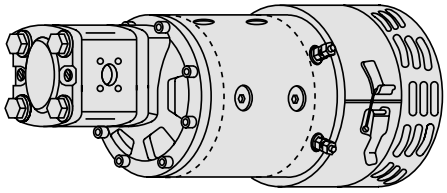


For transportation, use adeguate packing, in a carton or wooden case. Protect the motor to ensure that polystyrene, paper, metallic staples or other foreign bodies can not enter into the motor.
Always ensure that the output drive shaft **A**, the terminals **B**, and the non drive cover **C**, are adequately protected.
The motor–pump unit must be packed, transported and stored in a horizontal position.

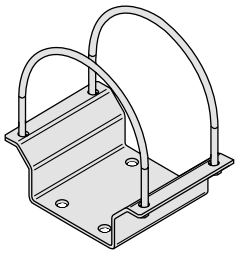
If the motor–pump unit is not required for immediate use, it must be stored in a clean area humidity and vibration free, to avoid damage to the bearings and electrical components.
For long storage periods, the brushes must be raised from the commutator, and the motor shaft must be turned regularly (once a month).
For storage over two weeks, apply a coat of paint or antioxiding grease to the motor shaft and driving flanges.

START-UP

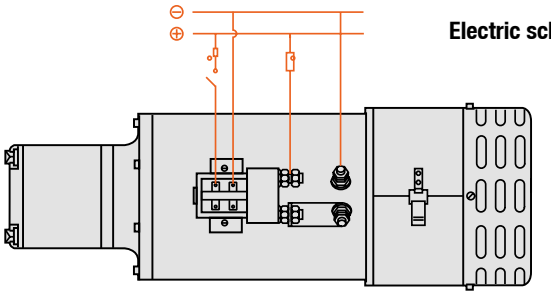
Motor case



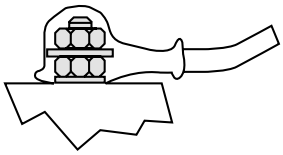
Complete support bracket unit



Electric scheme



Clamp protection



Mechanical connections

All the motor–pump units can be mounted in horizontal or vertical positions.
The fixing on the frame, should be made with a steel bracket that does not transmit vibrations to the motor–pump unit. Fasten the bracket to the area of the motor case. Do not use the terminals, the pump, the fan cover etc. for fixing the motor–pump unit. We recomand using the foot mounting bracket made by HYDROVEN. The motor–pump unit should be mounted in area large enough to allow sufficient ventilation and ease of maintenence.

Electrical connections

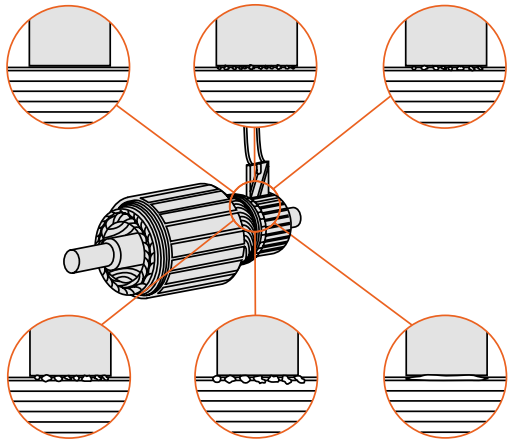
The connecting cable section must be sufficient to ensure that the current density does not exceed 3 A/mm².
The cable should be connected between the two nuts. It is essential that the terminal posts are locked when tightening the nuts, as the posts are connected directly to the motor field windings. Any disturbance of the posts could result in a failure of the connection to the field windings. Motor–pump units fitted with motor windings of the types, series wound, compound wound and shunt wound, have only one rotational direction, whichever way the electrical connections are made. Unless otherwise specified, HYDROVEN pumps have an anti–clockwise rotation, with the motor drive shaft clockwise. In any case always check the rotation shown on the rating plate.
For pumps fitted with permanent magnet motors, it is essential that the electrical connections are made strictly as per the polarity of the terminals.
In the event of these connections being interposed, and the motor runs in the wrong direction, it should be stopped immediately, the connections should be re–made and the oil seal fitted between motor and pump should be checked to ensure that the seating is still correct. The terminals should always be protected with the covers. If the motor–pump units are supplied with a starting switch, make sure that the wiring is made as reported on the below scheme. If the motor–pump units are installed on a truck, and are driven by an electronic controller, check always the compatibility between the motor winding and the type of the controller.

Hydraulic connections

The gear pumps supplied are of external gear low noise type. Please ensure the following: the ambient temperature is between –5°C and +60°C; the oil temperature is between –10°C to +80°C. For higher temperatures special oil seals need to be supplied. The oil viscosity should be from 12 to 80 mm²/s. Oil filtration should be < 25 µm.
That for correct operation the suction pipe oil speed should be between V = 0,6–1,2 m/s, and the delivery pipe oil speed should between V = 6–8 m/s. That the difference in height between the oil tank and the pump should be kept to a minimum. The pipe should be as straight as possible, with as few diameter differences, and as short as possible. The pump can not operate if there is pressure at the suction port. Ensure the presence of a relief valve in the hydraulic circuit and that it is in good working condition and adjusted at the right pressure.

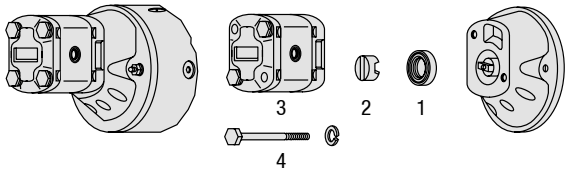
MAINTENANCE

Correct sparking

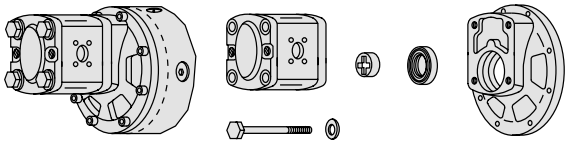


Not correct sparking

Group 1 pump assembling



Group 2 pump assembling



Starting checking

After completing the installation check the following. That all screws and nuts are tight. The insulation between the terminals and motor case (must be > 2 MΩ). Start the motor–pump unit and check that electrical and hydraulic connections are correct.
Check that the pump flow is correct. The use of incorrect pipe diameter or lenght can cause noise, air bubbles in the oil, reduction or lack in oil delivery.
Check that the current at maximum power is in within that shown on the rating plate. Inspect the brush/commutator contact, this is very important to establish the correct installation and setting of the motor–pump unit.

Periodic checking

Every 500 working hours, you should check:

- Brushes: check the wear, the correct seating and the regularity of the working surface.
- Springs: they must not be burned or damaged and they must apply a constant and equal pressure on the brush.
- Manifold: the surface must be clean and regular without grooving or burning.

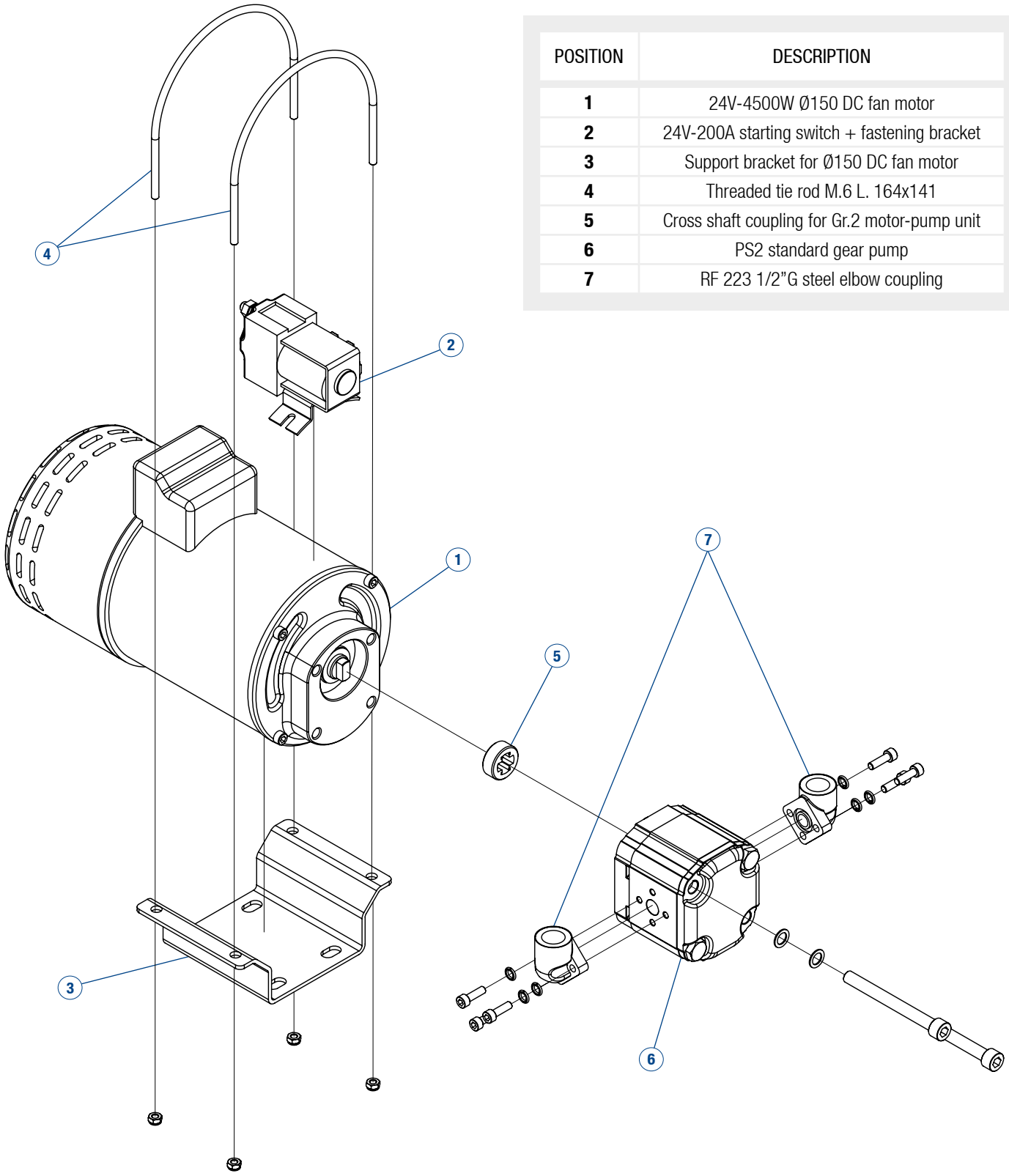
Every 1000 working hours, you should check:

- Bearings: all the bearings are fitted with a double shield and lubricated with high temperature grease; check for leaks, vibration and noise. If necessary replace with bearings of identical type.
- Insulation: check, in particular in a humid ambient, the insulation to earth, it must be > 2 MΩ.
- Seals: check that hydraulic seals are in perfect condition.
- Screws: check that all nuts, particularly the cable nuts and screws are tight.
- Windings: check the insulation to earth, it must be > 2MΩ, then check that foreign bodies or dirt have not entered the motor. Check also that the ventilation holes are clean and not obstructed.

Gear pumps maintenance and fitting instruction

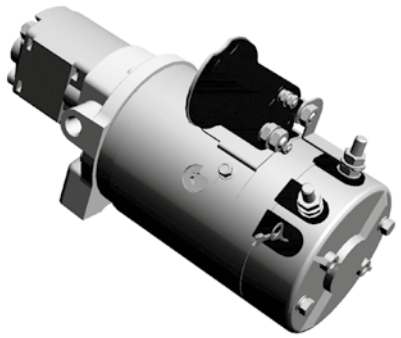
The pumps supplied are of the external gear type, and are low noise in operation. There are two main types classified as group 1 and group 2.
Group 1. To assemble the pump, follow these instructions. Insert the retaining oil seal washer (1) in the appropriate location, this is essential to prevent oil leaking from the pump into the motor.
When mounting the pump (3) pay careful attention that the coupling (2) is positioned correctly and inserts into the spigot of the motor shaft. Also ensure that no damage is done to the "O" ring positioned in the centre of the pump. Mounting of the pump is achieved using screws (4). The tightening down torque must not exceed 25 Nm.
Group 2. To fit or substitute the pump procede as group 1. However in this case there are four fixing screws and the tightening down torque must not exceed 50 Nm.

EXPLODED DRAWING
EXAMPLE OF MOTOR–PUMP UNIT



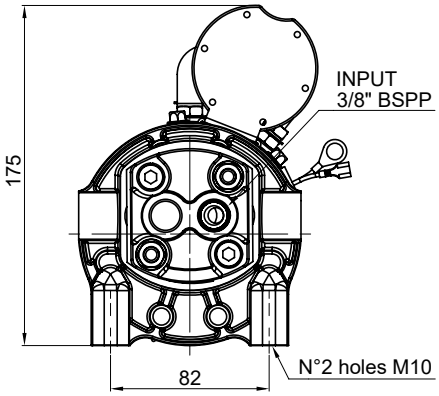
POSITION	DESCRIPTION
1	24V-4500W Ø150 DC fan motor
2	24V-200A starting switch + fastening bracket
3	Support bracket for Ø150 DC fan motor
4	Threaded tie rod M.6 L. 164x141
5	Cross shaft coupling for Gr.2 motor-pump unit
6	PS2 standard gear pump
7	RF 223 1/2"G steel elbow coupling

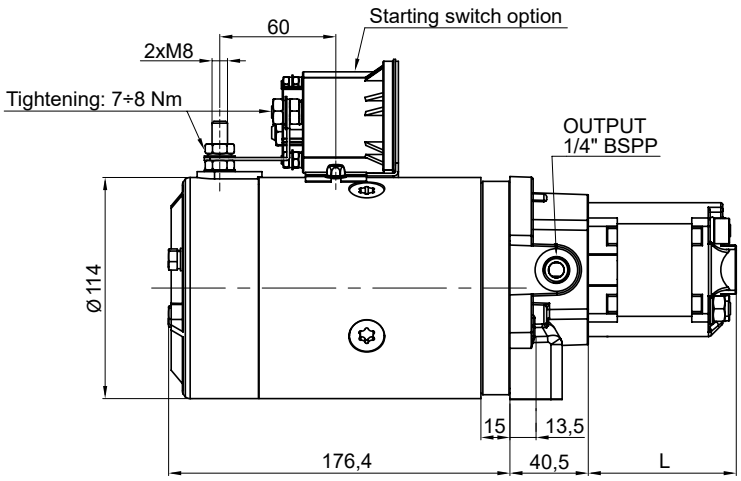
MOTOR-PUMP UNIT 12V - 1600W - Ø114



MAIN FEATURES

Degree of protection	IP54
Insulation class	F
Motor rotation direction	RH (motor shaft output side)
Pump rotation direction	LH



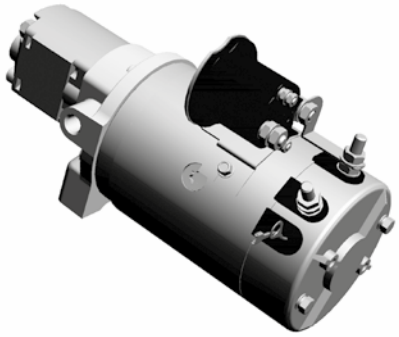


RANGE AVAILABLE

COMPONENT CODE	NOMINAL POWER (W)	NOMINAL VOLTAGE	NOMINAL CURRENT	NOMINAL SPEED (rpm)	WORK CYCLE	TYPE PUMP	NOMINAL DISPLACEMENT (cc/rev)	L (mm)	SCREWS (mm)	WEIGHT (kg)
623A160PSA10	1600	12VDC	240 A	2650	S2: 2 min S3: 5% ED	PSA1	1.00	61.5	M8X75	9.6
623A160PSA12	1600	12VDC	240 A	2650	S2: 2 min S3: 5% ED	PSA1	1.20	63.0	M8X75	9.6
623A160PSA16	1600	12VDC	240 A	2650	S2: 2 min S3: 5% ED	PSA1	1.60	64.5	M8X80	9.7
623A160PSA20	1600	12VDC	240 A	2650	S2: 2 min S3: 5% ED	PSA1	2.00	66.0	M8X80	9.7
623A160PSA25	1600	12VDC	240 A	2650	S2: 2 min S3: 5% ED	PSA1	2.50	68.0	M8X80	9.7
623A160PSA32	1600	12VDC	240 A	2650	S2: 2 min S3: 5% ED	PSA1	3.20	71.0	M8X85	9.8
623A160PSA37	1600	12VDC	240 A	2650	S2: 2 min S3: 5% ED	PSA1	3.70	73.0	M8X85	9.8

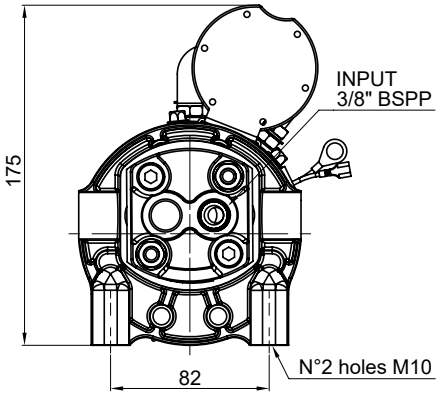
Notes: 1) The component code of each motor–pump unit includes the motor, the associated pump with specific screws and washers, the machined flange (code 1201PF02120A) and the shaft coupling (code 1201PG00560T).
2) **Attention!** The starting switch and the thermal protection are also included in the component code.
3) If different orientations and non–standard starting switches are necessary, contact the Hydroven sales department.

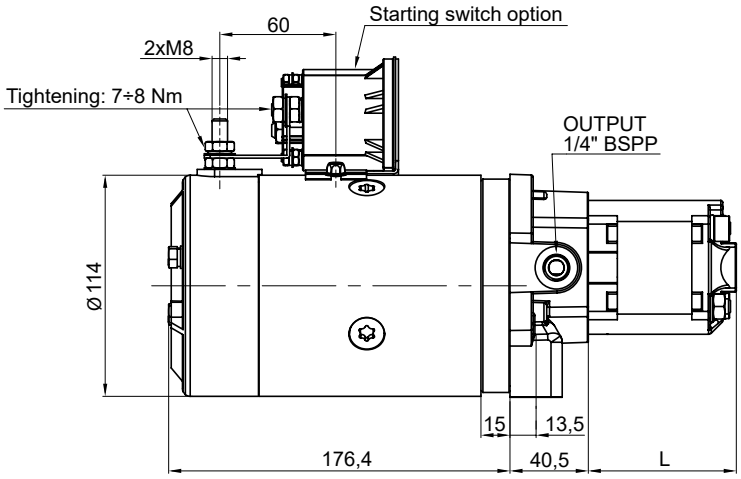
MOTOR-PUMP UNIT 24V - 2200W - Ø114



MAIN FEATURES

Degree of protection	IP54
Insulation class	F
Motor rotation direction	RH (motor shaft output side)
Pump rotation direction	LH



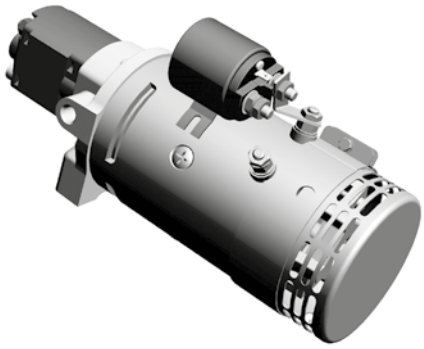


RANGE AVAILABLE

COMPONENT CODE	NOMINAL POWER (W)	NOMINAL VOLTAGE	NOMINAL CURRENT	NOMINAL SPEED (rpm)	WORK CYCLE	TYPE PUMP	NOMINAL DISPLACEMENT (cc/rev)	L (mm)	SCREWS (mm)	WEIGHT (kg)
623B220PSA10	2200	24VDC	140 A	2600	S2: 2 min S3: 5% ED	PSA1	1.00	61.5	M8X75	9.6
623B220PSA12	2200	24VDC	140 A	2600	S2: 2 min S3: 5% ED	PSA1	1.20	63.0	M8X75	9.6
623B220PSA16	2200	24VDC	140 A	2600	S2: 2 min S3: 5% ED	PSA1	1.60	64.5	M8X80	9.7
623B220PSA20	2200	24VDC	140 A	2600	S2: 2 min S3: 5% ED	PSA1	2.00	66.0	M8X80	9.7
623B220PSA25	2200	24VDC	140 A	2600	S2: 2 min S3: 5% ED	PSA1	2.50	68.0	M8X80	9.7
623B220PSA32	2200	24VDC	140 A	2600	S2: 2 min S3: 5% ED	PSA1	3.20	71.0	M8X85	9.8
623B220PSA37	2200	24VDC	140 A	2600	S2: 2 min S3: 5% ED	PSA1	3.70	73.0	M8X85	9.8

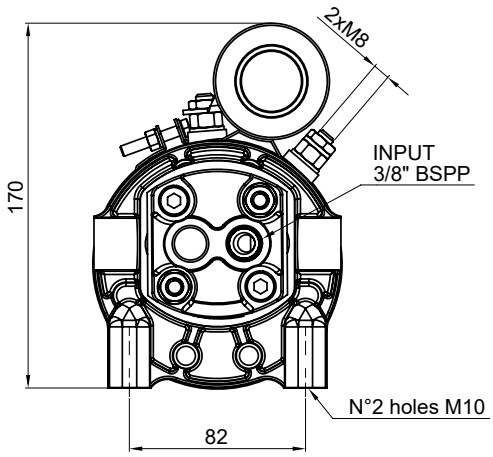
Notes: 1) The component code of each motor–pump unit includes the motor, the associated pump with specific screws and washers, the machined flange (code 1201PF02120A) and the shaft coupling (code 1201PG00560T).
2) **Attention!** The starting switch and the thermal protection are also included in the component code.
3) If different orientations and non–standard starting switches are necessary, contact the Hydroven sales department.

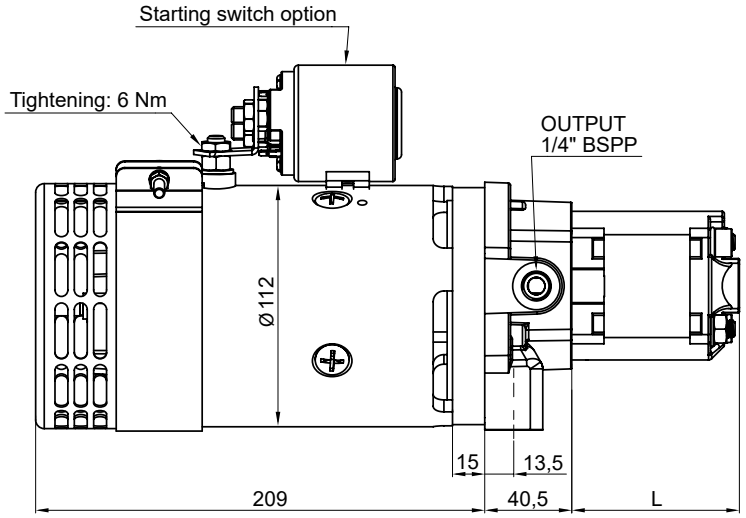
FAN MOTOR-PUMP UNIT 12V - 2000W - Ø112



MAIN FEATURES

Degree of protection	IP21
Insulation class	F
Motor rotation direction	RH (motor shaft output side)
Pump rotation direction	LH



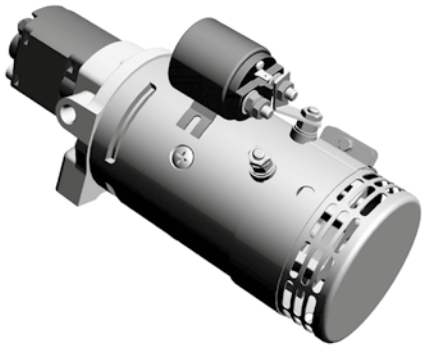


RANGE AVAILABLE

COMPONENT CODE	NOMINAL POWER (W)	NOMINAL VOLTAGE	NOMINAL CURRENT	NOMINAL SPEED (rpm)	WORK CYCLE	TYPE PUMP	NOMINAL DISPLACEMENT (cc/rev)	L (mm)	SCREWS (mm)	WEIGHT (kg)
623A200PSA10	2000	12VDC	270 A	2300	S2: 3 min	PSA1	1.00	61.5	M8X75	9.3
623A200PSA12	2000	12VDC	270 A	2300	S2: 3 min	PSA1	1.20	63.0	M8X75	9.3
623A200PSA16	2000	12VDC	270 A	2300	S2: 3 min	PSA1	1.60	64.5	M8X80	9.4
623A200PSA20	2000	12VDC	270 A	2300	S2: 3 min	PSA1	2.00	66.0	M8X80	9.4
623A200PSA25	2000	12VDC	270 A	2300	S2: 3 min	PSA1	2.50	68.0	M8X80	9.4
623A200PSA32	2000	12VDC	270 A	2300	S2: 3 min	PSA1	3.20	71.0	M8X85	9.5
623A200PSA37	2000	12VDC	270 A	2300	S2: 3 min	PSA1	3.70	73.0	M8X85	9.5

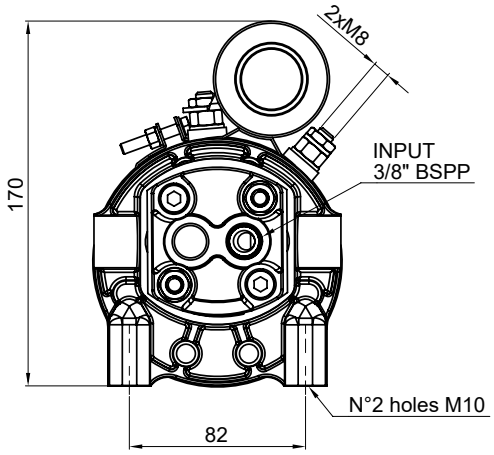
Notes: 1) The component code of each motor–pump unit includes the motor, the associated pump with specific screws and washers, the machined flange (code 1201PF02120A) and the shaft coupling (code 1201PG00560T).
2) **Attention!** The starting switch and the thermal protection are also included in the component code.
3) If different orientations and non–standard starting switches are necessary, contact the Hydroven sales department.

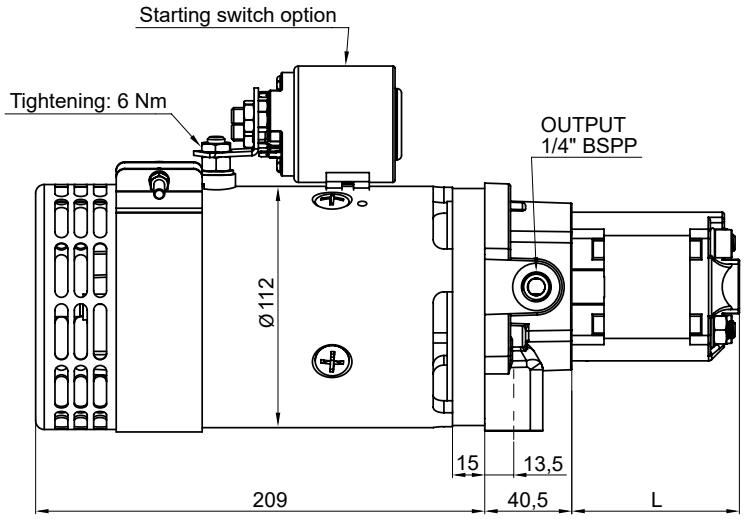
FAN MOTOR-PUMP UNIT 24V - 2000W - Ø112



MAIN FEATURES

Degree of protection	IP21
Insulation class	F
Motor rotation direction	RH (motor shaft output side)
Pump rotation direction	LH



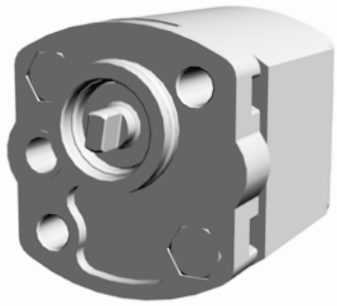


RANGE AVAILABLE

COMPONENT CODE	NOMINAL POWER (W)	NOMINAL VOLTAGE	NOMINAL CURRENT	NOMINAL SPEED (rpm)	WORK CYCLE	TYPE PUMP	NOMINAL DISPLACEMENT (cc/rev)	L (mm)	SCREWS (mm)	WEIGHT (kg)
623B200PSA10	2000	24VDC	121 A	2300	S2: 5 min	PSA1	1.00	61.5	M8X75	9.3
623B200PSA12	2000	24VDC	121 A	2300	S2: 5 min	PSA1	1.20	63.0	M8X75	9.3
623B200PSA16	2000	24VDC	121 A	2300	S2: 5 min	PSA1	1.60	64.5	M8X80	9.4
623B200PSA20	2000	24VDC	121 A	2300	S2: 5 min	PSA1	2.00	66.0	M8X80	9.4
623B200PSA25	2000	24VDC	121 A	2300	S2: 5 min	PSA1	2.50	68.0	M8X80	9.4
623B200PSA32	2000	24VDC	121 A	2300	S2: 5 min	PSA1	3.20	71.0	M8X85	9.5
623B200PSA37	2000	24VDC	121 A	2300	S2: 5 min	PSA1	3.70	73.0	M8X85	9.5

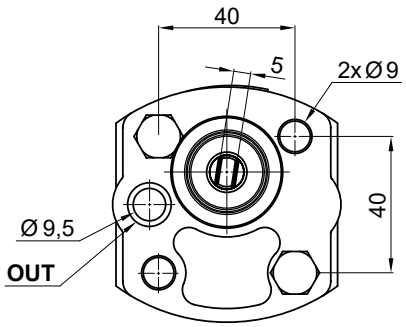
Notes: 1) The component code of each motor–pump unit includes the motor, the associated pump with specific screws and washers, the machined flange (code 1201PF02120A) and the shaft coupling (code 1201PG00560T).
2) **Attention!** The contactor and the thermal protection are also included in the component code.
3) If different orientations and non–standard contactors are necessary, contact the Hydroven sales department.

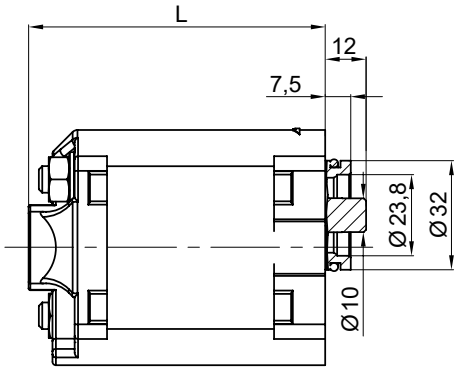
SPARE PARTS FOR MOTOR-PUMP UNITS Ø112 / 114

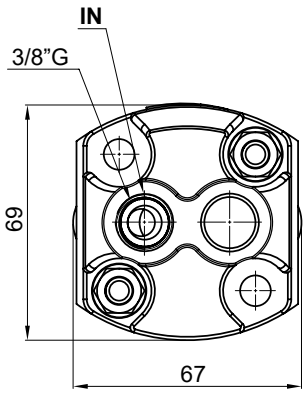


MAIN FEATURES

Oil temperature	-15 / +80°C
Suction pressure	0.7 < P < 3.0 Bar (absolute pressure)
Screw tightening torque	25 Nm
Pressure definitions	Peak pressure: cycle 2 s ON
	Intermittent pressure: cycle 20 s ON
	Continuous pressure: cycle always ON







RANGE AVAILABLE

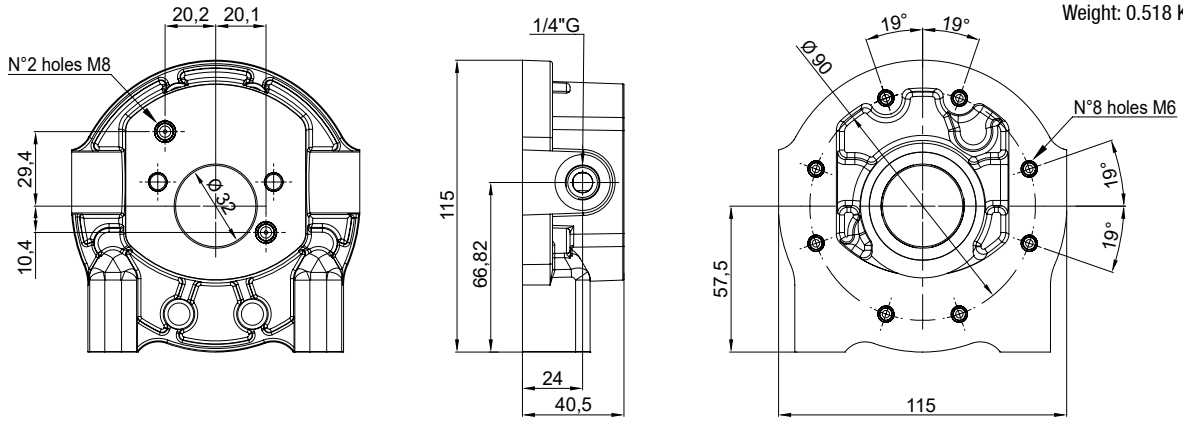
COMPONENT CODE	TYPE PUMP	NOMINAL DISPLACEMENT (cc/rev)	NOMINAL PRESSURE (bar)	PEAK PRESSURE (bar)	FULL SPEED (rpm)	L (mm)	SCREWS (mm)	WEIGHT (kg)
13B1W2D2ABBX	PSA1	1.00	200	280	4000	73.5	M8X75	0.7
13B1W2D2BBBX	PSA1	1.20	200	280	4000	75.0	M8X75	0.7
13B1W2D2CBBX	PSA1	1.60	200	280	4000	76.5	M8X80	0.8
13B1W2D2EBBX	PSA1	2.00	200	280	4000	78.0	M8X80	0.8
13B1W2D2GBBX	PSA1	2.50	200	280	4000	80.0	M8X80	0.8
13B1W2D2JBBX	PSA1	3.20	200	280	4000	83.0	M8X85	0.9
13B1W2D2KBBX	PSA1	3.70	180	260	3600	85.0	M8X85	0.9
13B1W2D2MBBX	PSA1	4.20	180	260	3600	87.0	M8X85	0.9
13B1W2D2NBBX	PSA1	5.00	140	230	3000	90.0	M8X90	0.9
13B1W2D2QBBX	PSA1	6.00	140	230	3000	93.5	M8X95	1.0

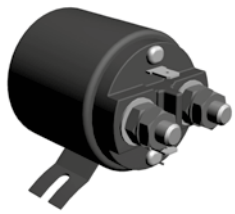
Notes: 1) The pumps are supplied with screws and washers for easy installation.
2) Standard rotation direction: anti–clockwise rotation on the shaft side. Clockwise rotation pumps available on request. Ask our sales department.
3) Appropriate washers can be used to adapt the length of the screws.

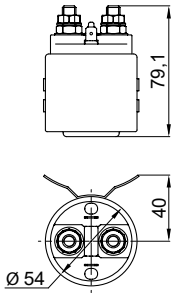
SPARE PARTS FOR MOTOR-PUMP UNITS Ø112 / 114

LH 1/4”G adaptor flange for motor–pump unit

code **1201PF02120A**
Weight: 0.518 Kg





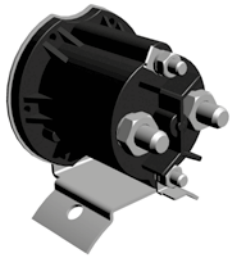


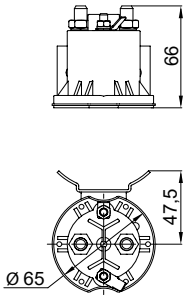
150A starting switch
for motors Ø112

Component code
56252121500K (12V DC)
56252241500K (24V DC)

MAIN FEATURES

Weight	0.695 kg
Working temperature	-20 / +50 °C
Nominal current	150A
Peak current (5 sec)	350A
Minimum insertion voltage	≤ 8.4V (12V) ≤ 16.8V (24V)
Current absorbed by solenoid valve	2.8 ± 0.1A (12V) 1.1 ± 0.1A (24V)





200A starting switch
for motors Ø114

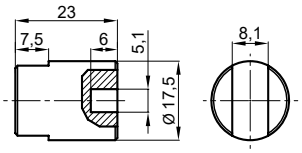
Component code
56252120801G (12V DC)
56252240801G (24V DC)

MAIN FEATURES

Weight	0.373 kg
Degree of protection	IP66
Continuous service nominal current	130A
50% service nominal current	200A
Maximum current	400A
Breaking capacity	400A / 24V
Maximum voltage on contacts	28V

Shaft coupling

For gr.1 pump
code **1201PG00560T**

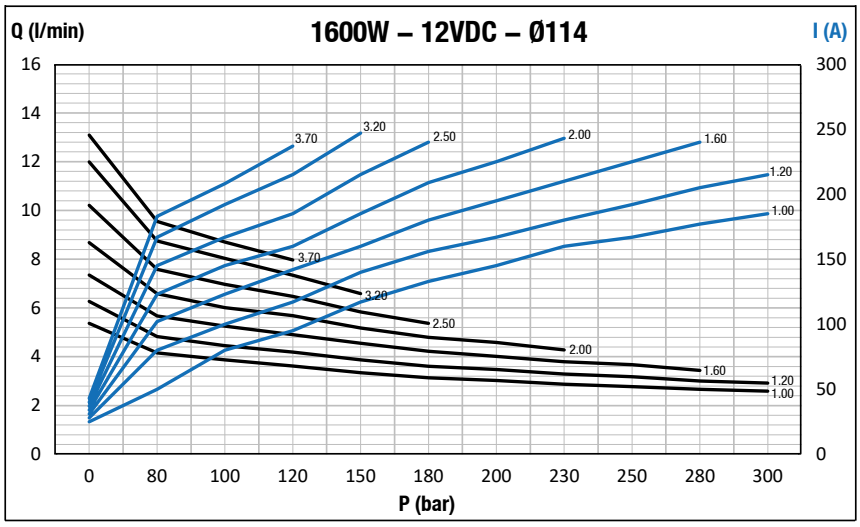


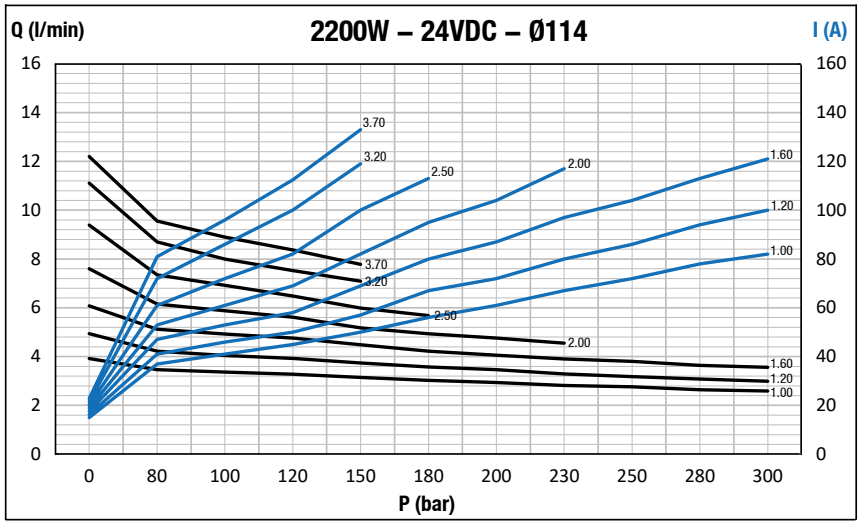
Brushes kit for motor

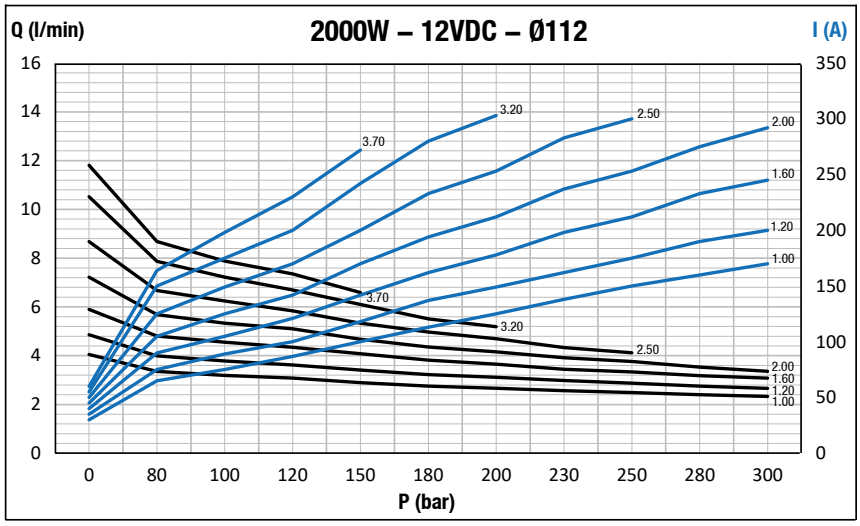
RANGE AVAILABLE

DESCRIPTION	COMPONENT CODE	QUANTITY OF BRUSHES
BRUSHES KIT FOR 12V - 1600W - Ø114 MOTOR	425Z0S12160E	4
BRUSHES KIT FOR 24V - 2200W - Ø114 MOTOR	425Z0S24220E	4
BRUSHES KIT FOR 12V - 2000W - Ø112 FAN MOTOR	425Z0S12200E	4
BRUSHES KIT FOR 24V - 2000W - Ø112 FAN MOTOR	425Z0S24200E	4

DIAGRAMS OF MOTOR-PUMP UNITS Ø112 / 114

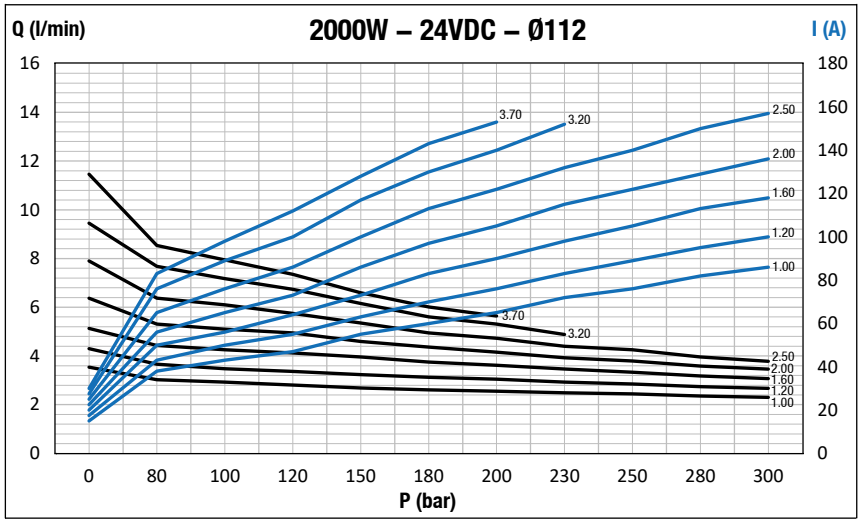






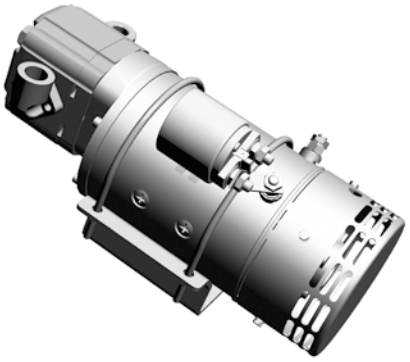
Notes: **Attention!** The graphs are approximate, since they can different as the parameters vary, such as: power supply voltage, environmental temperature, oil viscosity.

DIAGRAMS OF MOTOR-PUMP UNITS Ø112 / 114



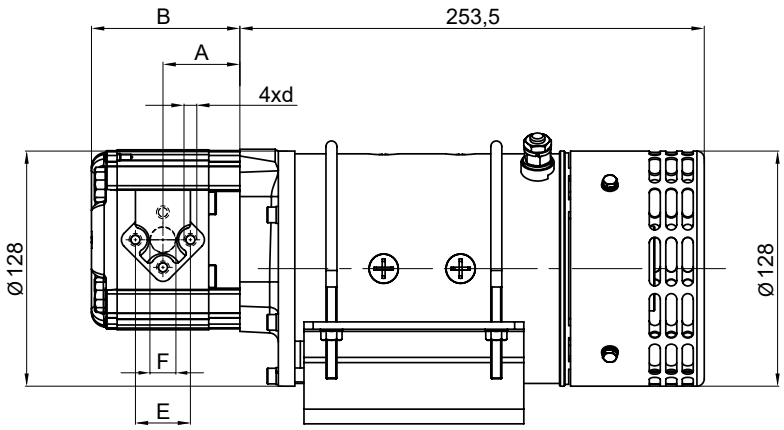
Notes: **Attention!** The graphs are approximate, since they can different as the parameters vary, such as: power supply voltage, environmental temperature, oil viscosity.

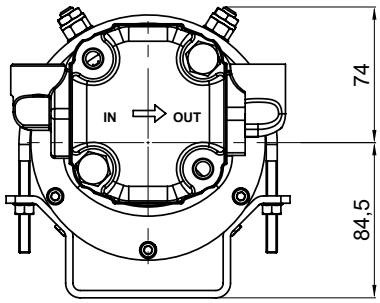
FAN MOTOR-PUMP UNIT 24V - 3000W - Ø125



MAIN FEATURES

Degree of protection	IP21
Insulation class	F
Motor nominal power	3000 W
Motor nominal voltage	24 VDC
Motor rotation direction	RH (motor shaft output side)
Pump rotation direction	LH



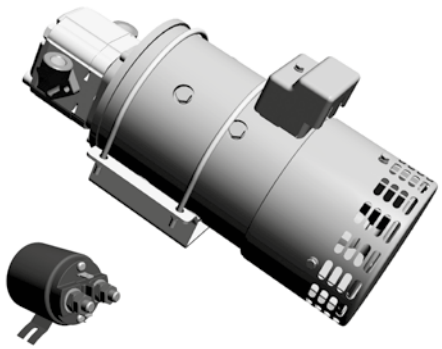


RANGE AVAILABLE

COMPONENT CODE	NOMINAL CURRENT	NOMINAL SPEED (rpm)	WORK CYCLE	TYPE PUMP	NOMINAL DISPLACEMENT (cc/rev)	A (mm)	B (mm)	SCREWS (mm)	INPUT (OUTPUT) E (mm)	INPUT (OUTPUT) d	INPUT (OUTPUT) F (mm)	WEIGHT (kg)
623B3004CE02	176 A	2600	S2: 9 min	PS2	4.50	40.5	82	M10X100	30.2 (30.2)	M6 (M6)	13.1 (13.1)	15.8
623B3006CE02	176 A	2600	S2: 9 min	PS2	6.30	42	85	M10X100	30.2 (30.2)	M6 (M6)	13.1 (13.1)	15.8
623B3008CE02	176 A	2600	S2: 9 min	PS2	8.20	43.5	87.9	M10X100	30.2 (30.2)	M6 (M6)	13.1 (13.1)	15.9

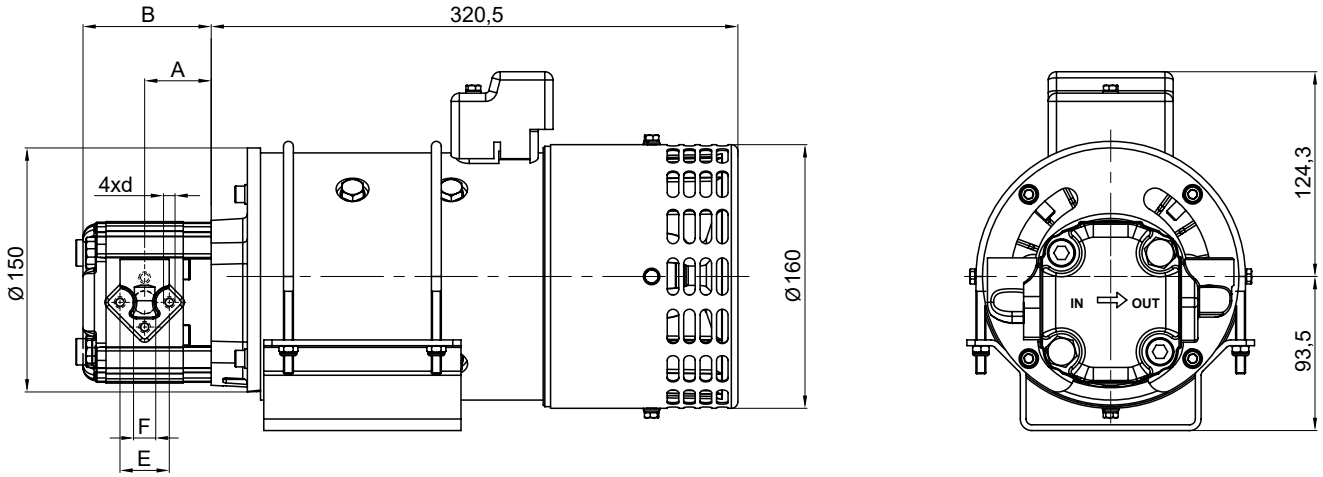
Notes: 1) The component code of each motor–pump unit includes the motor, the associated pump with specific screws and washers, associated RF steel elbow couplings, cross shaft coupling (code 539010101365), starting switch and associated complete support bracket unit.
2) **Attention!** Even the starting switch and the thermal protection are included in the component code.
3) If different orientations and non–standard starting switches are necessary, contact the Hydroven sales department.

FAN MOTOR-PUMP UNIT 24V - 3000W - Ø150



MAIN FEATURES

Degree of protection	IP23
Insulation class	F
Motor nominal power	3000 W
Motor nominal voltage	24 VDC
Motor rotation direction	RH (motor shaft output side)
Pump rotation direction	LH

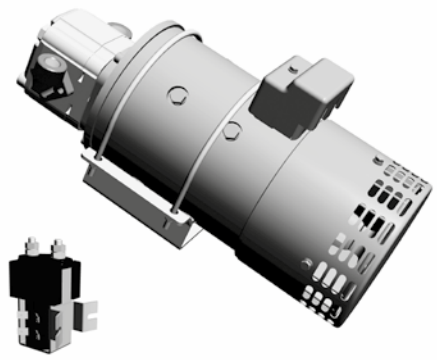


RANGE AVAILABLE

COMPONENT CODE	NOMINAL CURRENT	NOMINAL SPEED (rpm)	WORK CYCLE	TYPE PUMP	NOMINAL DISPLACEMENT (cc/rev)	A (mm)	B (mm)	SCREWS (mm)	INPUT (OUTPUT) E (mm)	INPUT (OUTPUT) d	INPUT (OUTPUT) F (mm)	WEIGHT (kg)
623B3104CEH0	174 A	2000	S2: 15 min	PS2	4.50	40.5	82	M10X100	30.2 (30.2)	M6 (M6)	13.1 (13.1)	22.7
623B3106CEH0	174 A	2000	S2: 15 min	PS2	6.30	42	85	M10X100	30.2 (30.2)	M6 (M6)	13.1 (13.1)	22.7
623B3108CEH0	174 A	2000	S2: 15 min	PS2	8.20	43.5	87.9	M10X100	30.2 (30.2)	M6 (M6)	13.1 (13.1)	22.8
623B3111CEH0	174 A	2000	S2: 15 min	PS2	11.30	46	93.1	M10X120	39.7 (30.2)	M8 (M6)	19 (14.2)	23.0
623B3114CEH0	174 A	2000	S2: 15 min	PS2	14.00	48	97.4	M10X120	39.7 (30.2)	M8 (M6)	19 (14.2)	23.2

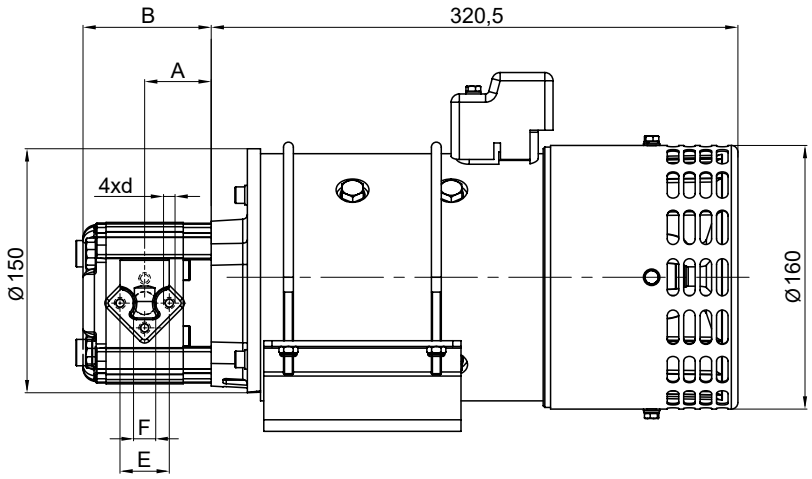
Notes: 1) The component code of each motor–pump unit includes the motor, the associated pump with specific screws and washers, associated RF steel elbow couplings, cross shaft coupling (code 539010101365), starting switch and associated complete support bracket unit.
2) **Attention!** The starting switch and the thermal protection are included in the component code of the motor–pump unit, **BUT** the starting switch is supplied.
3) If different orientations and non–standard starting switches are necessary, contact the Hydroven sales department.

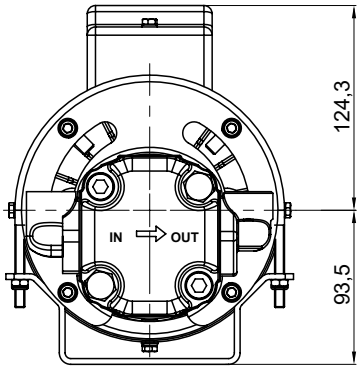
FAN MOTOR-PUMP UNIT 24V - 4500W - Ø150



MAIN FEATURES

Degree of protection	IP23
Insulation class	F
Motor nominal power	4500 W
Motor nominal voltage	24 VDC
Motor rotation direction	RH (motor shaft output side)
Pump rotation direction	LH



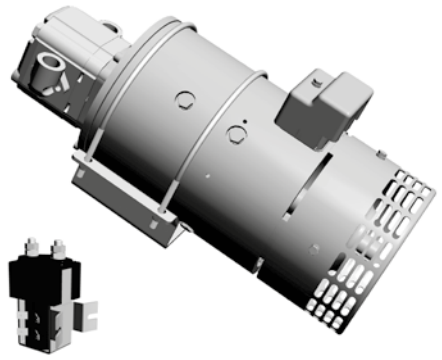


RANGE AVAILABLE

COMPONENT CODE	NOMINAL CURRENT	NOMINAL SPEED (rpm)	WORK CYCLE	TYPE PUMP	NOMINAL DISPLACEMENT (cc/rev)	A (mm)	B (mm)	SCREWS (mm)	INPUT (OUTPUT) E (mm)	INPUT (OUTPUT) d	INPUT (OUTPUT) F (mm)	WEIGHT (kg)
623B4504CFL0	268 A	2000	S2: 4.5 min S3: 12% ED	PS2	4.50	40.5	82	M10X100	30.2 (30.2)	M6 (M6)	13.1 (13.1)	21.5
623B4506CFL0	268 A	2000	S2: 4.5 min S3: 12% ED	PS2	6.30	42	85	M10X100	30.2 (30.2)	M6 (M6)	13.1 (13.1)	21.5
623B4508CFL0	268 A	2000	S2: 4.5 min S3: 12% ED	PS2	8.20	43.5	87.9	M10X100	30.2 (30.2)	M6 (M6)	13.1 (13.1)	21.6
623B4511CFL0	268 A	2000	S2: 4.5 min S3: 12% ED	PS2	11.30	46	93.1	M10X110	39.7 (30.2)	M8 (M6)	19 (14.2)	21.9
623B4514CFL0	268 A	2000	S2: 4.5 min S3: 12% ED	PS2	14.00	48	97.4	M10X120	39.7 (30.2)	M8 (M6)	19 (14.2)	22.1
623B4516CFL0	268 A	2000	S2: 4.5 min S3: 12% ED	PS2	16.00	50	100.6	M10X120	39.7 (30.2)	M8 (M6)	19 (14.2)	22.1
623B4519CFL0	268 A	2000	S2: 4.5 min S3: 12% ED	PS2	19.00	52	105.5	M10X120	39.7 (30.2)	M8 (M6)	19 (14.2)	22.3

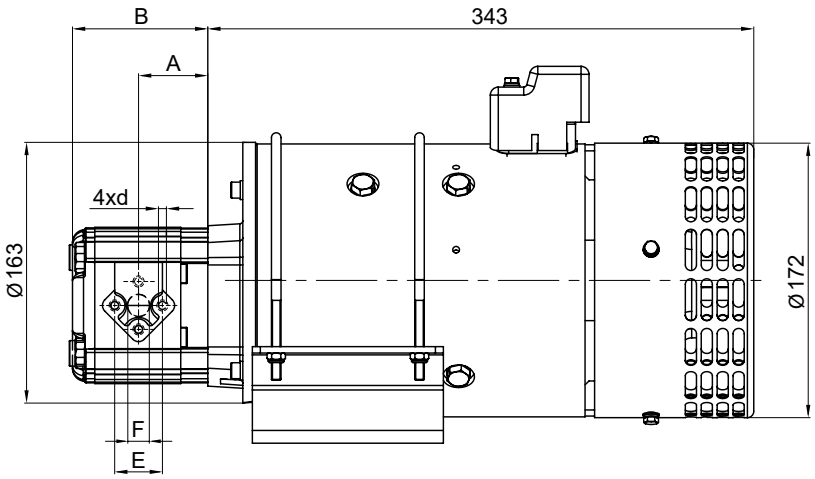
Notes: 1) The component code of motor–pump unit includes the motor, the associated pump with specific screws and washers, associated RF steel elbow couplings, cross shaft coupling (code 539010101365), starting switch and associated complete support bracket unit.
2) **Attention!** The starting switch and the thermal protection are included in the component code of the motor–pump unit, **BUT** the starting switch is supplied.
3) If different orientations and non–standard standard switches are necessary, contact the Hydroven sales department.

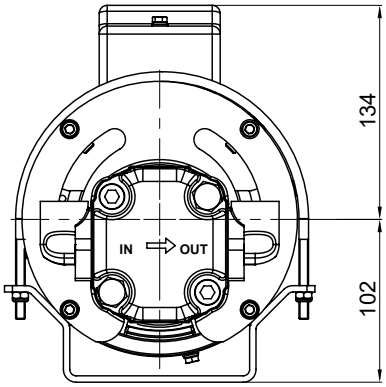
FAN MOTOR-PUMP UNIT 24V - 4500W - Ø170



MAIN FEATURES

Degree of protection	IP23
Insulation class	F
Motor nominal power	4500 W
Motor nominal voltage	24 VDC
Motor rotation direction	RH (motor shaft output side)
Pump rotation direction	LH





RANGE AVAILABLE

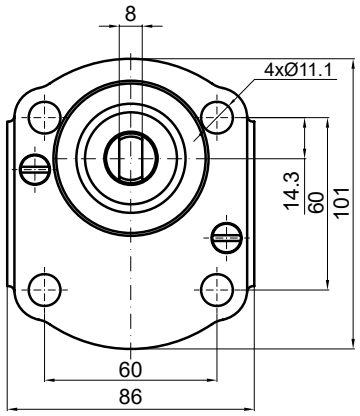
COMPONENT CODE	NOMINAL CURRENT	NOMINAL SPEED (rpm)	WORK CYCLE	TYPE PUMP	NOMINAL DISPLACEMENT (cc/rev)	A (mm)	B (mm)	SCREWS (mm)	INPUT (OUTPUT) E (mm)	INPUT (OUTPUT) d	INPUT (OUTPUT) F (mm)	WEIGHT (kg)
623B4504VFN0	248 A	2000	S3: 25% ED	PS2	4.50	40.5	82	M10X100	30.2 (30.2)	M6 (M6)	13.1 (13.1)	32.0
623B4506CFN0	248 A	2000	S3: 25% ED	PS2	6.30	42	85	M10X100	30.2 (30.2)	M6 (M6)	13.1 (13.1)	32.0
623B4508CFN0	248 A	2000	S3: 25% ED	PS2	8.20	43.5	87.9	M10X100	30.2 (30.2)	M6 (M6)	13.1 (13.1)	32.1
623B4511CFN0	248 A	2000	S3: 25% ED	PS2	11.30	46	93.1	M10X110	39.7 (30.2)	M8 (M6)	19 (14.2)	32.3
623B4514CFN0	248 A	2000	S3: 25% ED	PS2	14.00	48	97.4	M10X120	39.7 (30.2)	M8 (M6)	19 (14.2)	32.5
623B4516CFN0	248 A	2000	S3: 25% ED	PS2	16.00	50	100.6	M10X120	39.7 (30.2)	M8 (M6)	19 (14.2)	32.5
623B4519CFN0	248 A	2000	S3: 25% ED	PS2	19.00	52	105.5	M10X120	39.7 (30.2)	M8 (M6)	19 (14.2)	32.7

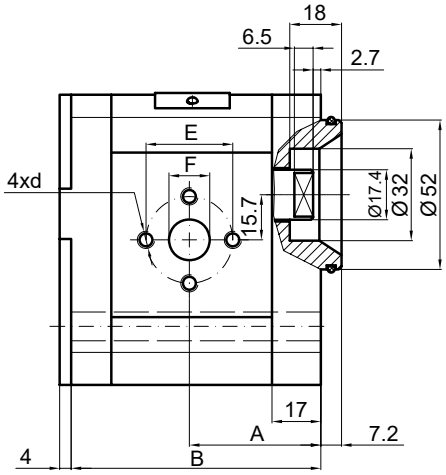
Notes: 1) The component code of motor–pump unit includes the motor, the associated pump with specific screws and washers, associated RF steel elbow couplings, cross shaft coupling (code 539010101365), starting switch and associated complete support bracket unit.
2) **Attention!** The starting switch and the thermal protection are included in the component code of the motor–pump unit, **BUT** the starting switch is supplied.
3) If different orientations and non–standard starting switches are necessary, contact the Hydroven sales department.

SPARE PARTS FOR MOTOR-PUMP UNITS Ø125 / 150 / 170

MAIN FEATURES

Oil temperature	-15 / +80°C
Suction pressure	0.7 < P < 3.0 Bar (absolute pressure)
Screw tightening torque	50 Nm
Pressure definitions	Peak pressure: cycle 2 s ON
	Intermittent pressure: cycle 20 s ON
	Continuous pressure: cycle always ON

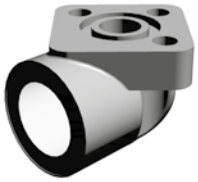




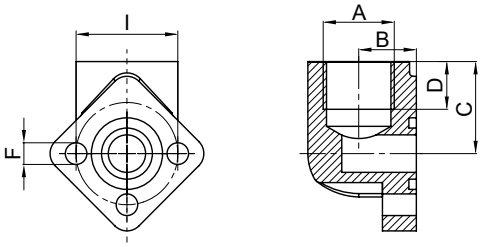
RANGE AVAILABLE

COMPONENT CODE	TYPE PUMP	NOMINAL DISPLACEMENT (cc/rev)	NOMINAL PRESSURE (bar)	PEAK PRESSURE (bar)	FULL SPEED (rpm)	A (mm)	B (mm)	INPUT (OUTPUT) E (mm)	INPUT (OUTPUT) d	INPUT (OUTPUT) F (mm)	WEIGHT (kg)
13B2R2C1AKKC	PS2	4.50	250	275	3500	40.5	78	30.2 (30.2)	M6 (M6)	13.1 (13.1)	2.2
13B2R2C1CKKC	PS2	6.30	250	275	3500	42	81	30.2 (30.2)	M6 (M6)	13.1 (13.1)	2.2
13B2R2C1EKKC	PS2	8.20	250	275	3500	43.5	83.9	30.2 (30.2)	M6 (M6)	13.1 (13.1)	2.3
13B2R2C1GLKC	PS2	11.30	250	275	3500	46	89.1	39.7 (30.2)	M8 (M6)	19 (14.2)	2.4
13B2R2C1JKKC	PS2	14.00	250	275	3500	48	93.4	39.7 (30.2)	M8 (M6)	19 (14.2)	2.6
13B2R2C1LKKC	PS2	16.00	250	262.5	2500	50	96.6	39.7 (30.2)	M8 (M6)	19 (14.2)	2.6
13B2R2C1NKKC	PS2	19.00	200	262.5	2500	52	101.5	39.7 (30.2)	M8 (M6)	19 (14.2)	2.8

Notes: 1) Standard rotation direction: anti–clockwise rotation on the shaft side. Clockwise rotation pumps available on request. Ask our sales department.
2) Appropriate washers can be used to adapt the length of the screws.



Steel elbow couplings

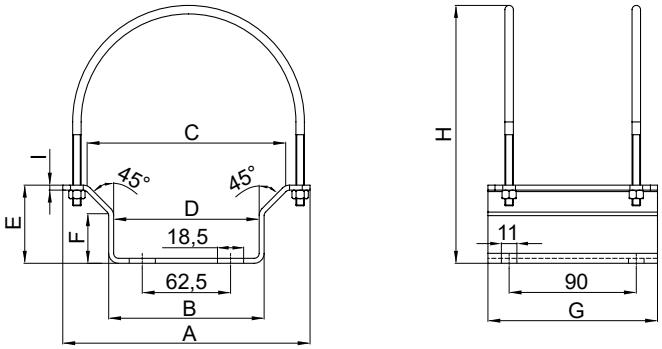


RANGE AVAILABLE

COMPONENT CODE	TYPE	A	B (mm)	C (mm)	D (mm)	I (mm)	F (mm)	SCREWS (mm)	WEIGHT (kg)
75211B30012A	RF 223	1/2"G	17	27	14	30	6.5	M6X20	0.176
75211B40013A	RF 225	3/4"G	22	36	16	40	8.5	M8X25	0.349
75211B30011A	RF 238	3/8"G	17	27	14	30	6.5	M6X20	0.190

Available galvanised only and with metric screws, washers and OR.

Complete support bracket unit



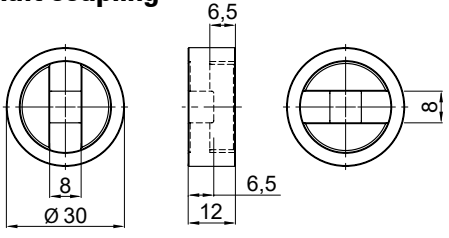
RANGE AVAILABLE

DESCRIPTION	COMPONENT CODE	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	I (mm)	WEIGHT (kg)
Support kit Ø125	425Z0SK12500	155	90	120	82	55.5	35	120	160	4	0.955
Support kit Ø150	425Z0SK15000	175	110	140.1	103	55	35	120	182	3.5	1.046
Support kit Ø170	425Z0SK17100	195	121	160.1	113	60.5	35	120	194	4	1,157

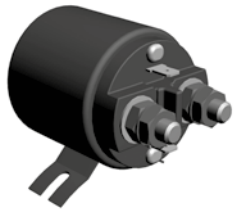
Kit with support, tie rods and self–locking nuts.

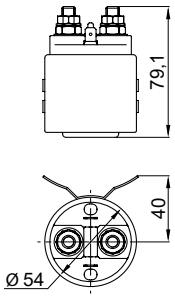
Cross shaft coupling

For gr.2 pump
code **539010101365**



SPARE PARTS FOR MOTOR-PUMP UNITS Ø125 / 150 / 170





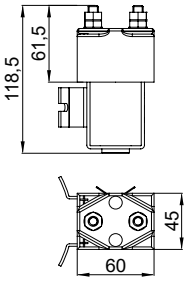
150A starting switch

for motors Ø125 and 150 (3.0 kW)

Component code
56252241500K (24V DC)

MAIN FEATURES

Weight	0.695 kg
Working temperature	-20 / +50 °C
Nominal current	150A
Peak current (5 sec)	350A
Minimum insertion voltage	≤ 8.4V (12V) ≤ 16.8V (24V)
Current absorbed by solenoid valve	2.8 ± 0.1A (12V) 1.1 ± 0.1A (24V)



200A starting switch

for motors Ø150 (4.5 kW) and 170

Component code
56252242000K (24V DC)

MAIN FEATURES

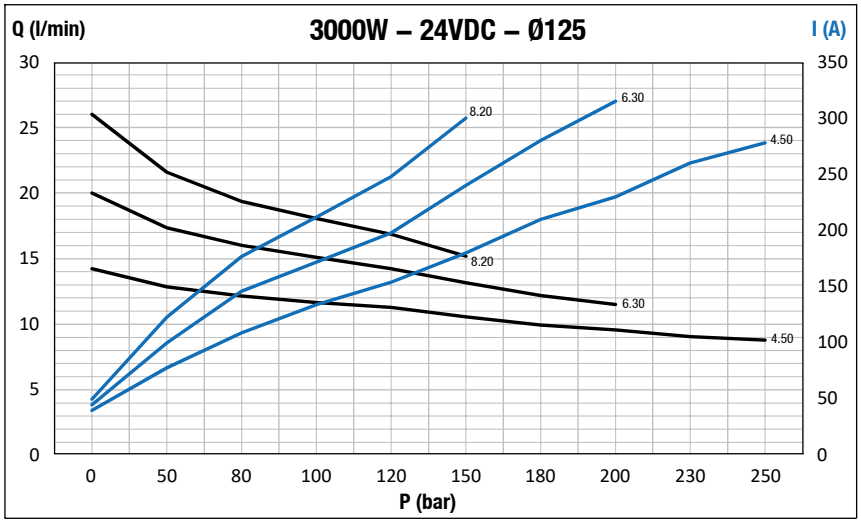
Weight	0.59 kg
Working temperature	-40 / +60 °C
Nominal current	200A
50% service nominal current	285A
Maximum current	300A
Maximum voltage on contacts	60V

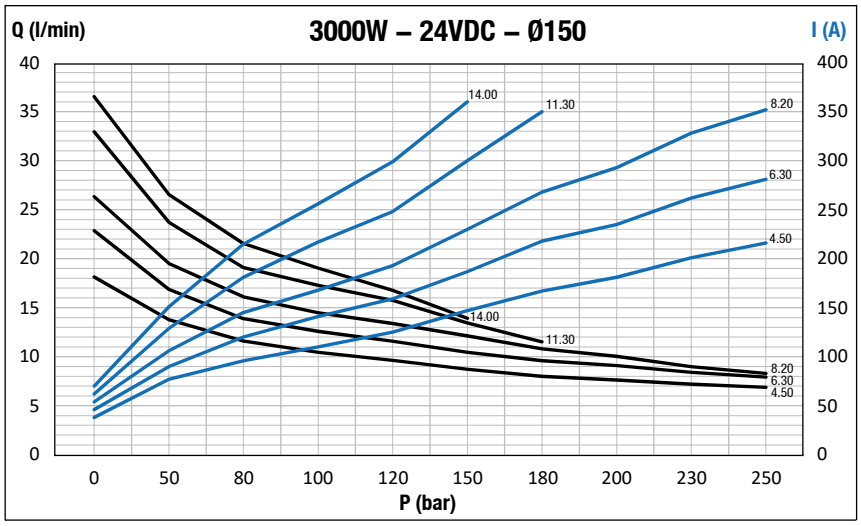
Brushes kit for motor

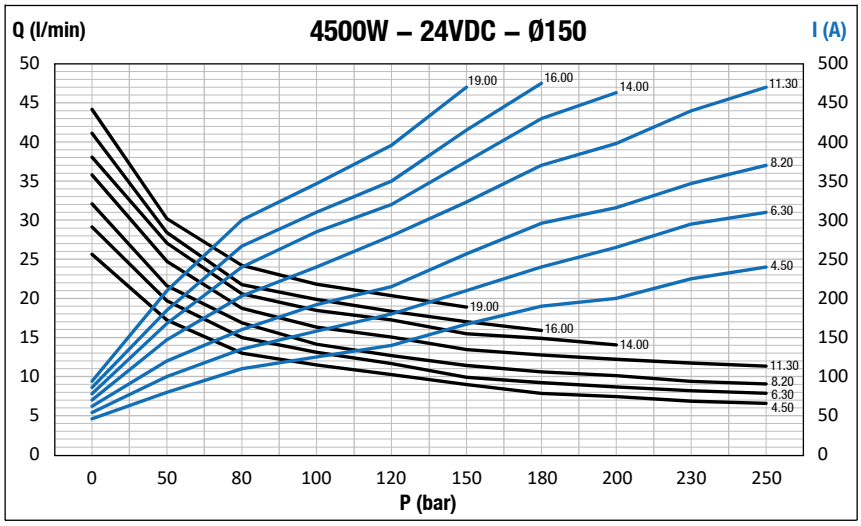
RANGE AVAILABLE

DESCRIPTION	COMPONENT CODE	QUANTITY OF BRUSHES
BRUSHES KIT FOR 24V - 3000W - Ø125 FAN MOTOR	425Z0S24305E	4
BRUSHES KIT FOR 24V - 3000W - Ø150 FAN MOTOR	425Z0S24306E	8
BRUSHES KIT FOR 24V - 4500W - Ø150 FAN MOTOR	425Z0S24455E	8
BRUSHES KIT FOR 24V - 4500W - Ø170 FAN MOTOR	425Z0S24457E	8

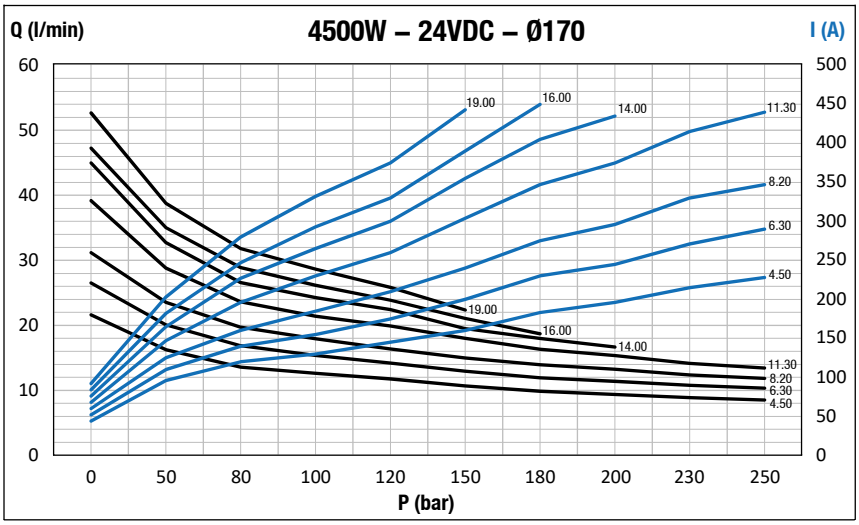
DIAGRAMS OF MOTOR-PUMP UNITS Ø125 / 150 / 170







Notes: **Attention!** The graphs are approximate, since they can different as the parameters vary, such as: power supply voltage, environmental temperature, oil viscosity.



Notes: **Attention!** The graphs are approximate, since they can different as the parameters vary, such as: power supply voltage, environmental temperature, oil viscosity.

S1, S2 AND S3 SERVICES

The electric motors, according to their design and type of use, can be used in certain ways, categorised as follows:

- **S1** or **Continuous service**
  Functioning of the constantly charged motor for an indefinite period of time, however sufficient to reach heat balance.

- **S2** or **Limited duration service**
  Constantly charged operation for a set period of time, under that required to reach heat balance, followed by a rest period of sufficient duration to re–establish equality between the temperatures of the machine and that of the cooling fluid, with a tolerance of 2°C.

- **S3** or **Periodic intermittent service**
  Sequence of equal operating cycles composed of a period of constantly charged operation and a period without charge and without electrical power supply. Correct start–up does not influence raising of the temperature.
  Unless otherwise specified, the duration of a cycle for the service S3 is 10 minutes and intermittent ratios should assume a value among the following: 10%, 15%, 20%, 30%, 75%.

  The S3 service type has a rest time (i.e. without external charges applied) during which the motor has the time to cool, thereby allowing overcharging compared to when it is used with S1 service (and therefore non–stop under charge). Furthermore, the motors with service other than S1 are not included in the European regulation concerning high efficiency motors.

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