

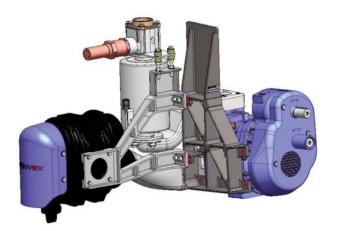
### INSTRUCTIONS 1401-W00 e

Section 1401 Effective April 2023 Replaces April 2020

Original instructions

# LS-DDNC

# Instructions for application DIRECT DRIVE PACKAGE MISTRAL - B600 - TYPHON II



INSTALLATION
OPERATION
MAINTENANCE
SAFETY
STORAGE



This Instruction only contains direct drive package information. It is imperative to have in complement the compressor one and also all the others relatives to the accessories, also the parts list before installing the equipment.

### **EC CERTIFICATE OF CONFORMITY:**

The EC Certificate of Conformity (paper version) is systematically attached to the equipment when shipped.

### WARRANTY:

LS-DDNC packages (except the compressor : see compressor Instructions) are covered 24 months by warranty within the limits mentioned in our General Sales Conditions. In case of a use other than that mentioned in the Instructions manual, and without preliminary agreement of MOUVEX, warranty will be canceled.

Warranty extension with oil BSC3: See § WARRANTY.

a - DOVER company

Your distributor:

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### **MOUVEX TRUCK SCREW COMPRESSOR**

### SAFETY, STORAGE, INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

# MODELS : LS-DDNC DIRECT DRIVE PACKAGE MISTRAL - B600 - TYPHON II

TABLE OF CONTENTS	Page
1. OVERALL DIMENSIONS	4
2. INSTALLATION 2.1 Mounting location 2.2 Mounting procedure 2.3 At succion 2.4 Safety valve / Check relief 2.5 Drive 2.6 Instrumentation 2.7 Chair modification	10 11 11 11
3. USE	
4. MAINTENANCE  4.1 Maintenance schedules  4.2 Air filter replacement procedure  4.3 Cartridge replacement procedure  4.4 Drive train inspection  4.5 Check and relief valve inspection	13 13 13
5. TROUBLESHOOTING	14
6. WARRANTY 6.1 Warranty claims 6.2 24-months warranty extension with BSC3 oil .	15
7. STORAGE CONDITIONS 7.1 Compressor 7.2 BSC oil	15
8. SCRAPPING	15
9. COMPRESSORS FORM INFORMATION	16

### REMARKS:

MOUVEX truck screw-type compressors MUST be installed in systems designed by qualified personnel. The installation MUST be in compliance with local standards, national regulations and rules of safety.

This package is designed to be used on paved roads. Unless, it is necessary to move towards a package DDK to achieve a strengthened and adapted to the situation set.

This manual is designed to permit installation and commissioning of MOUVEX truck screw-type compressors and MUST accompany the compressor.

Maintenance of MOUVEX screw-type compressors must ONLY be carried out by qualified technicians. This maintenance must meet local and national standards as well as all safety regulations. Read this manual, including all instructions and warnings, in full BEFORE any use of MOUVEX compressors.

Reading and the removal of the labels on the package apply to approval.

### **Definition of safety symbols**



This is a SAFETY ALERT SYMBOL.

When you see this symbol on the product, or in the manual, look for one of the following signal words and be alert to the potential for personal injury, death or major property damage.



Warns of hazards that WILL cause serious personal injury, death or major property damage.



Warns of hazards that CAN cause serious personal injury, death or major property damage.



Warns of hazards that CAN cause personal injury or property damage.

### **NOTICE**

Indicates special instructions which are very important and must be followed.

### ADDITIONAL DOCUMENTATION

The table below gives the list of instructions in addition to this application instruction :

LS-DDNC application	Instructions	Parts list
B600 20R/30R	NT 1401-K00	PL 1401-K01 PL 1401-W01
B600 13R/15L B600 19R/22L	NT 1401-K00	PL 1401-K01 PL 1401-Q01 PL 1401-W01
MISTRAL 20R/30R	NT 1401-J00	PL 1401-J01 PL 1401-W01
MISTRAL 13R/15L MISTRAL 19R/22L	NT 1401-J00	PL 1401-J01 PL 1401-Q01 PL 1401-W01
TYPHON II 20R/30R	NT 1401-G00	PL 1401-G01 PL 1401-W01
TYPHON II 13R/15L TYPHON II 19R/22L	NT 1401-G00	PL 1401-G01 PL 1401-Q01 PL 1401-W01
Torque limiter	NT 1401-B00	PL 1401-Q01
Check and relief valve	NT 1401-E00	PL 1401-Q01
Oil cooler	NT 1401-AC00	PL 1401-Q01
Air cooler	NT 1401-AJ00	-

### SAFETY DATA

### WARNING



Hazardous machinery can cause severe personal injury or property damage.

IT IS IMPERATIVE TO APPLY THE TRUCK PARKING BRAKE AND TO BLOCK THE WHEELS BEFORE ANY INTERVENTION DUE TO RISKS OF SERIOUS BODILY INJURIES OR PRO-PERTY DAMAGE.

### WARNING



Hazardous fluids can cause fire. serious personal injury or property damage.

COMPRESSING GASES INTO A VES-SEL CONTAINING FLAMMABLE OR EXPLOSIVE GASES OR COMPRESSING FLAMMABLE OR EXPLOSIVE GASES. CAN CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

### WARNING



Hazardous pressure personal injury or property damage. FAILURE TO INSTALL ADEQUATELY SIZED PRESSURE RELIEF VALVE(S) CAN CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

### CAUTION



Extreme heat can cause injury or property damage. COMPRESSOR, PIPING AND ACCES-SORIES WILL BECOME HOT DURING OPERATION AND CAN CAUSE SERIOUS PERSONAL INJURY.

# WARNING



Hazardous or toxic fluids can cause

CONTENTS OF THE COMPRESSOR, TANK, PIPING, AND FILTERS COULD BE HAZARDOUS TO HEALTH. TAKE ALL NECESSARY PRECAUTIONS WHEN PERFORMING COMPRESSOR SERVICE OR MAINTENANCE.

# serious injury.

### WARNING



A loud noise can cause permanent body damage.

THE NOISE EMITTED BY WORKING MOUVEX SCREW COMPRESSOR CAN BE HIGHER THAN 80 DBA. THE END USERS MUST USE, WHEN NECESSARY THE APPROPRIATE EAR PROTECTIONS. FAILURE TO WEAR HEAR PROTECTIONS IN AREAS WHERE THE NOISE IS HIGHER THAN 80 DBA CAN LEAD TO PERMANENT BODY DAMAGE.

### SAFETY CHECK LIST

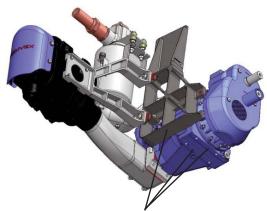
- 1. Before operating the compressor, ensure the vessel to which the compressor is connected is certified to withstand the pressure and /or vacuum produced.
- 2. Verify adequately sized relief valves (if necessary, CE approved) have been fitted to protect the vessel. Do not use solvents or inflammable products for cleaning the pipelines and the accessories.
- 3. Gas/air mixtures which are potentially volatile/explosive must not be introduced or allowed to be introduced into the compres-
- 4. All pressure vessel and piping connected to the compressor must be isolated and in a safe operating condition.
- 5. Operators should wear ear protection when operating truck mounted compressors.
- 6. There are components within the compressor of sufficient weight to cause injury if mishandled. Use proper lifting devices as necessary.
- 7. Where necessary, this equipment should be grounded to control static electricity.
- 8. The temperature of the air leaving the compressor is elevated above ambient due to air compression. Check that the elevated temperatures do not adversely affect the product and any material used in design of the system. Attach clearly marked warning signs to warn of potentially hot surfaces on the compressor, piping and accessories which will burn if touched.
- 9. Mounting of the compressor must be correctly engineered and the compressor must be properly secured. Refer to the Compressor Mounting section of this manual.

### NOTICE:

MOUVEX PACKAGE COMPRESSORS ARE DESIGNED TO PRODUCE COMPRESSED AIR, NOT TO PUMP GASES, LIQUIDS, POWDERS OR CONDENSATES THOUGH THE COMPRESSOR. TO DO SO WOULD VOID THE WARRANTY.

### **LIFTING POINTS:**

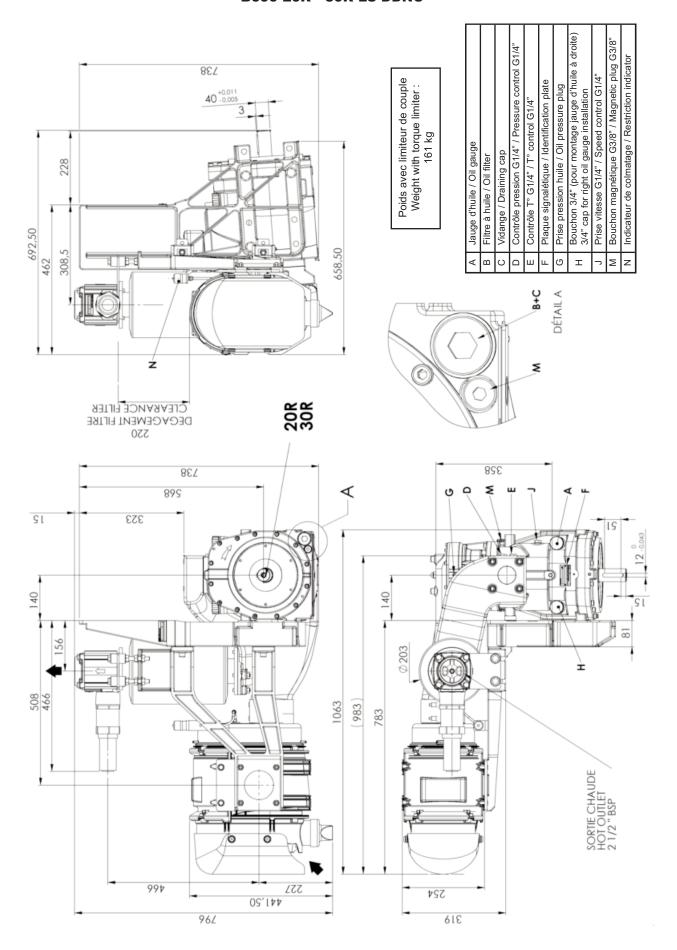
The compressor can be picked up from underneath to be transported.



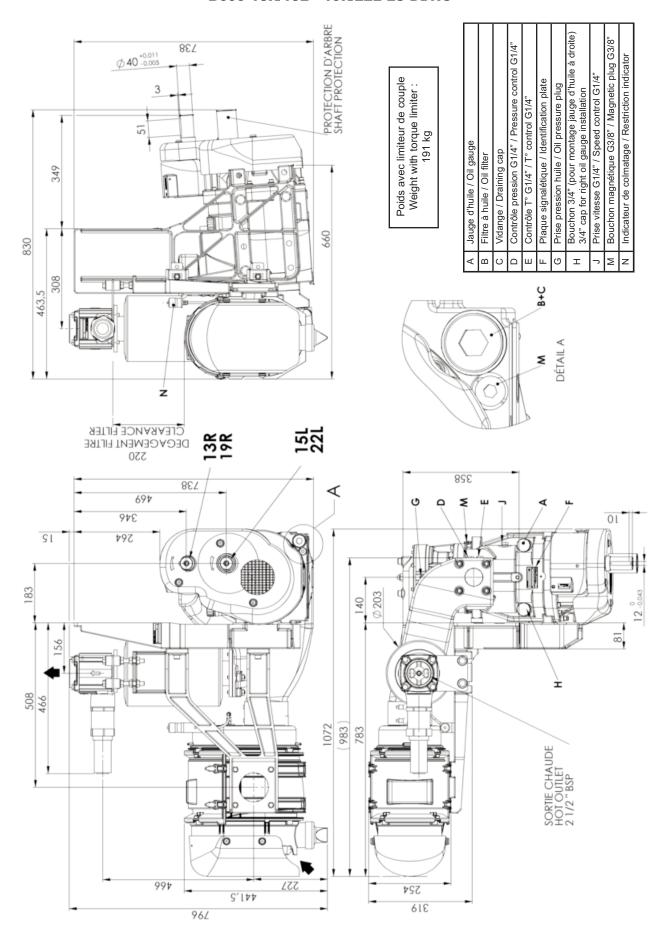
Those areas are acceptable to support the package Compressor and chair support should be favored.

# 1. OVERALL DIMENSIONS

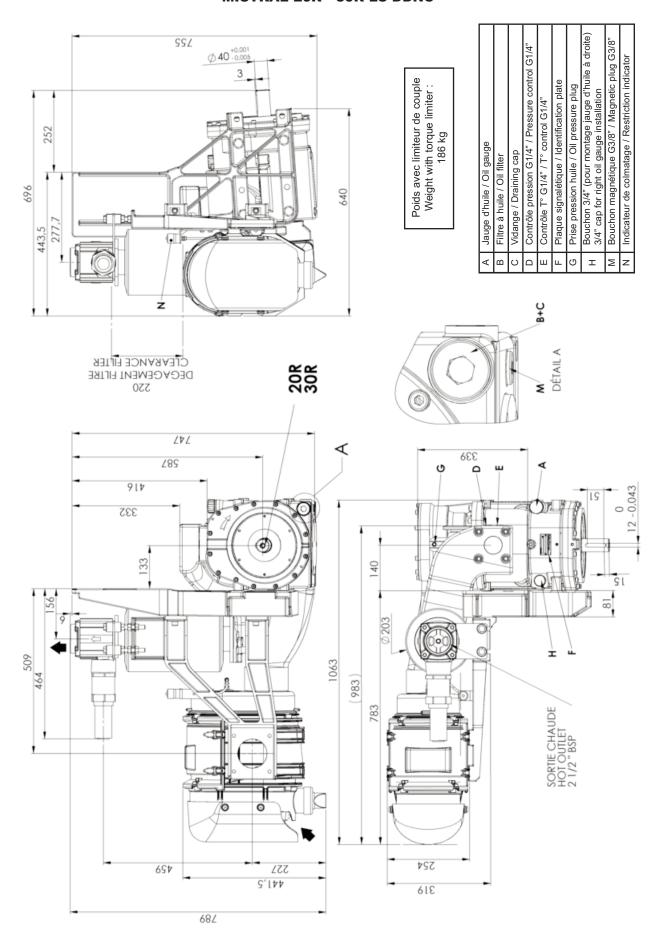
### **B600 20R - 30R LS-DDNC**



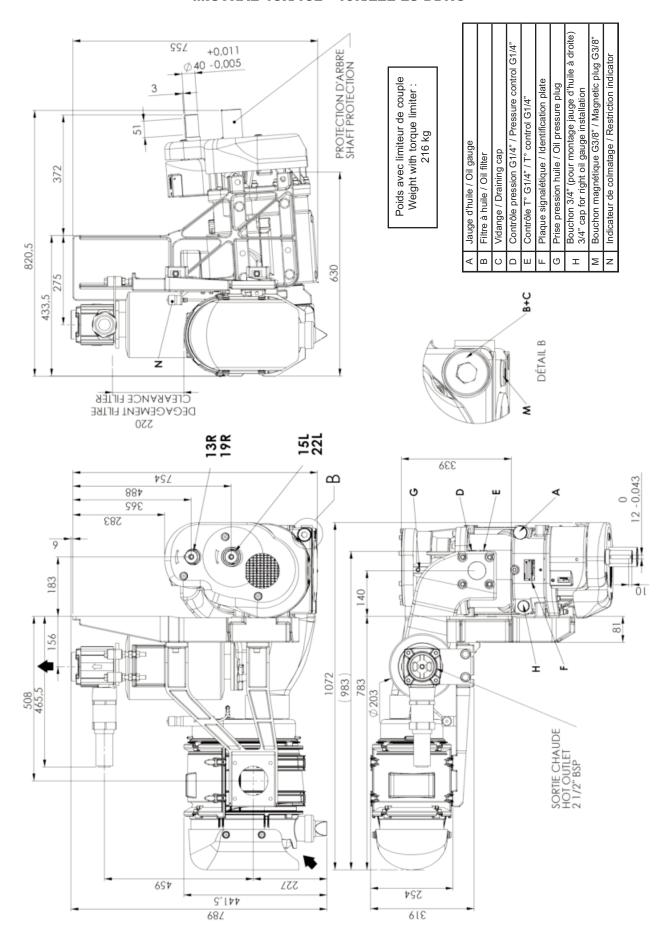
### B600 13R/15L - 19R/22L LS-DDNC



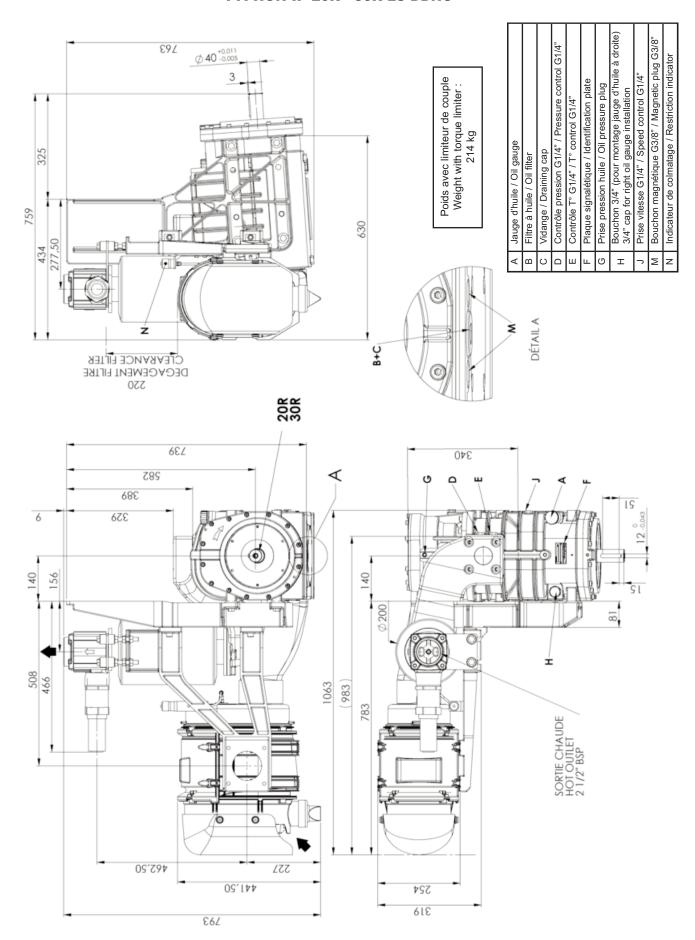
### **MISTRAL 20R - 30R LS-DDNC**



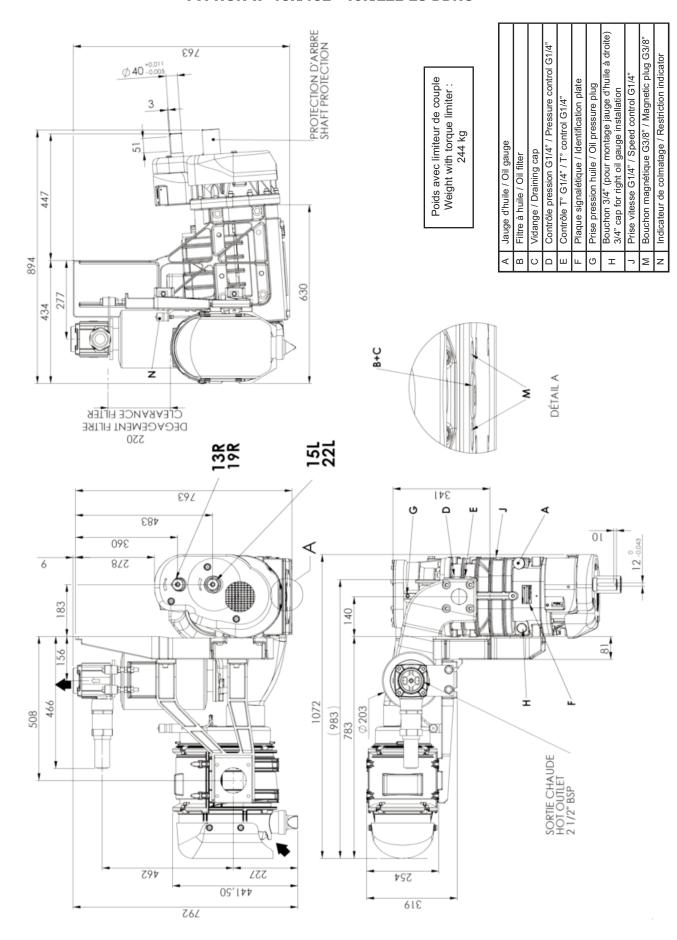
### **MISTRAL 13R/15L - 19R/22L LS-DDNC**



### **TYPHON II 20R - 30R LS-DDNC**



### TYPHON II 13R/15L - 19R/22L LS-DDNC



### 2. INSTALLATION

The screws used to hold the compressor in place must be at least quality 12-9.

During the assembly, watch that no foreign body penetrates into the compressor. The piping of inhalation and expulsion must be perfectly clean. Any foreign body risks to damage seriously the compressor.



The presence of foreign bodies in the compressor inlet channel is susceptible of leading to serious property damage or serious injuries.

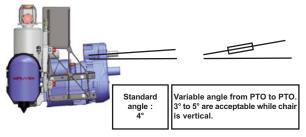
### 2.1 Mounting location

The compressor must be installed in a location where it is easily accessible. In particular, make sure that the oil filling plug, oil magnetic plugs and the filter are accessible.

The clogging indicator must remain visible to the operator.

Choose a location where the compressor is relatively protected from gravel projections and road spray as well as exhaust fumes and engine heat.

The compressor is mounted on the chair at an angle of 4°. If the chair is mounted vertically, it can be used to adapt to most movements, in other words those which have a gradient of between 3 and 5° inclusive.



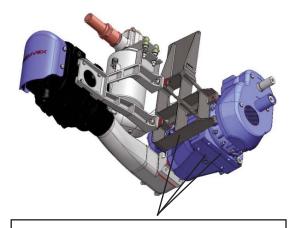
To prevent potential interferences between the package and the truck accessories (mudflap, tank...) a minimum distance of 5 cm between the package and these accessories must be respected.

### 2.2 Mounting procedure

### 2.2.1 Package handling procedure

Compressors are packaged and fixed onto a pallet. To move and install the package for the first time, the package should be carried on the pallet.

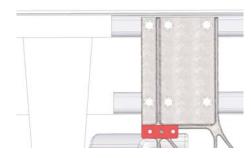
For maintenance operations, the package should be fastened onto a pallet such that the chair is vertical. The areas set aside for fastening the package are the compressor and the chair, as shown in the picture below.



Those areas are acceptable to support the package Compressor and chair support should be favored.

### 2.2.2 Package installation procedure

The compressor package is delivered in option with two U profiles mounting brackets. The U are not equal, so that the installer has more room to move when choosing the vertical position of the package.



We propose the following assembly procedure (without the  $\mbox{U})$  :

- Bring the compressor package to the side of the truck using a transpallet or any other suitable equipment.
- Determine the position of the package on the truck as close as possible to its final position.
- Check the universal joint angles and how parallel the compressor shaft and the PTO shaft are.
- Mark on the chair the positions of the holes necessary for assembly.
- Remove the package from the truck.
- Pierce the chair (and the U), deburr and clean. To make sure that you do not make the part fragile keep a minimum axle spread distance of 40 mm between 2 holes.
- · Bring the package to the truck.
- Mount the package (and the U) on the chassis with a minimum of 6 fixing points (M14 quality 12-9).
- Remove the pallet and package.
- Check the universal joint angles and how parallel the compressor shaft and the PTO shaft are.
- Mount the universal joint.
- Perform an operating test on the compressor.
- Check with a manometer the pressure at which the valve starts to open.

### 2. INSTALLATION (continued)

### 2.3 At succion

It must be installed in such a way that the temperature of the air sucked in is equivalent to 5°C either side of ambient temperature.

Any side protection barriers must be removed EACH time the compressor is used yo allow air to reach the compressor inlet freely, and move around the cooling circuit.

The installer must check whether there are such protective barriers and that they may be manipulated easily by the driver. It may be desirable to install a system preventing the operation of the PTO if the protection is not removed, to guarantee that the compressor operates under satisfactory conditions.

To prevent the filters from clogging prematurely, the air sucked in must be free of smoke and road dust.

A minimum distance of 300 mm must be left free in front of the filters for their extraction and replacement.

### 2.4 Safety valve / Check relief

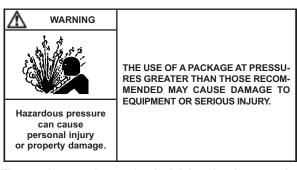
LS-DDNC packages include a safety valve and a check valve.

See Instructions 1401-E00 MISTRAL - B600 - TYPHON II CHECK AND RELIEF VALVE.

In the Low Space package case, connexion pressure drop has to be considered.

The 2 possible setting values are:

- 2 bar (2,3 bar at the compressor)
- 2,3 bar (2,5 bar at the compressor).



The maximum valve setting is 2,3 bar, but it must take into account the rotating speed range specified in the compressor instructions.

### 2.5 Drive

### 2.5.1 Speed range

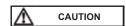
In order to comply with the machine directive, the rotating parts of the compressor package (shafts, torque limiter, universal joint, PTO ... ) must not be accessible to the user or the driver under normal conditions. If necessary, it is the installer's responsibility to fit the necessary protection for preventing any damage to equipment or physical injury.

MOUVEX cannot be held responsible for consequences due to the absence of such protection on the final installation.

The compressor may be operated directly by a universal joint shaft, with or without a multiplier.

The selection of the drive mode will take into account:

- The compressor mounting configuration
- The driving shaft rotation direction
- The expected power requirement for the given application
- · The acceptable rpm range for the driving equipment
- The acceptable rpm range for the compressor.



The use of compressors outside of their operating speed range can lead to property damage or serious injuries. See Compressor instructions for more details.

### **IMPORTANT:**

Any system providing for a compressor being driven by a thermal motor must include a system making it possible to disengage the compressor at startup and stop of the motor.

In all cases, the drive must make it possible:

- To maintain the compressor rotation speed during load variations (pressure variations).
- Not to subject the compressor to sudden or insufficient starts.

### 2.5.2 PTO shaft drive

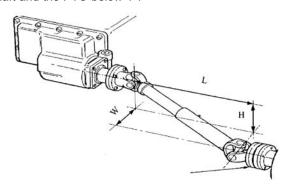
It is mandatory to comply with the following instructions:

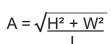
- The shaft must be dynamically balanced.
- Its length and its inclination must be as small as possible, see table
- The drive shaft slides perfectly well during rotation.
- The jaws of the universal joints are parallel.
- Coupling flanges show no eccentricity nor warping of the bearing surface.
- The angle formed by the universal joint and the drive shaft must not exceed 15°.
- The compressor shaft must be parallel to that of the drive shaft.
- The universal joint angle, as defined below, must ne minimised.

# 2. INSTALLATION (continued)

LS-DDNC packages incorporate a compressor gradient of  $4^{\circ}$  in relation to the horizontal. This gradient allows the recovery of the most recent PTO angles on current trucks. If your PTO angle is between 3 and  $5^{\circ}$  inclusive, you can install the chair vertically and respect operating recommendations.

If this is not the case, you should gently slope the chair to bring the angle between the compressor operating shaft and the PTO below 1°.





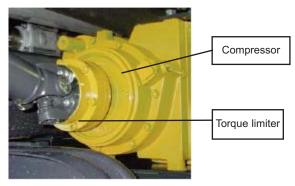
If H = Zero, A = W / LIf W = Zero, A = H / L

Α	Universal joint angle	
0,017	1°	
0,035	2°	
0,052	3°	VERY GOOD
0,070	4°	
0,087	5°	
0,105	6°	
0,125	7°	GOOD
0,141	8°	
0,158	9°	
0,176	10°	
0,194	11°	
0,213	12°	LIMIT VALUES
0,231	13°	
0,249	14°	
0,268	15°	

It is possible to equip packages with a multiplier to lessejn the universal joint angle. Refer to the compressor instructions for further information.

To protect the P.T.O in the event of compressor stalling, it is necessary to install a torque limiter. The MOUVEX company shall not be held responsible for damage resulting from such stalling if this stalling is caused by wrong manipulation with the compressor or if no or not the right torque limiter is installed.

The torque limiter will be installed on the compressor shaft, as illustrated in the photo below.



LS-DDNC packages may be ordered with torque limiters mounted. Refer to Instructions 1401-B00 TORQUE LIMITER - MISTRAL B600 TYPHON II.



If the greasing instructions for the universal joint are not respected, this can lead to ruptures of this universal joint, as well as property damage and serious injuries.

### 2.5.3 Installation of channelling

Channelling connected to the package must be designed in accordance with regulations to prevent premature breakdowns on the installation.

In particular, MOUVEX recommends taking the following precautions:

- Channelling must be supported so as to prevent then from mechanically loading the inlets and outlets on the compressor package.
- Discharge channelling must have a diameter at least equal to that of discharge connections on the compressor package.

### 2.6 Instrumentation

The package is supplied with an inlet filter clogging indicator.

Any use of the compressor package when the indicator is showing excessive clogging will cause damage to equipment or physical injury.

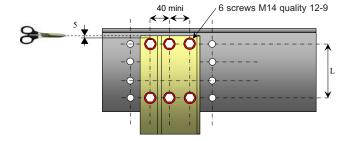
Once the filters have been replaced, the clogging indicator mat be reset to zero merely by rotating its cap.

### 2.7 Chair modification

The chair must not be modified except the following operations:

- Fixation holes as described above,
- Using of the fixation lines the most distant (L),
- Shortening allowed by taking care of the dimensions of 5 mm

risk of loss of MOUVEX warranty on the equipment.



### 3. USE

It is imperative to hold the hose in order to avoid whipping during pressurization.

The operator should remain nearby the equipment throughout the use to ensure the proper functioning of the system.



WARNING: SEVERE PERSONAL INJURY OR PROPERTY DAMAGE CAN CAUSE FROM WHIPPING HOSES.

### 4. MAINTENANCE

### 4.1 Maintenance schedules

See the compressor instructions for the maintenance programme.

### 4.2 Air filter replacement procedure

Check weekly the clogging indicator. When it turns red, replace the filter cartridge.

Before installing a new cartridge, clean the internal part of the filter housing with a clean damp cloth.



The presence of foreign bodies in the compressor inlet channel is susceptible of leading to serious property damage or serious injuries.

### 4.3 Cartridge replacement procedure

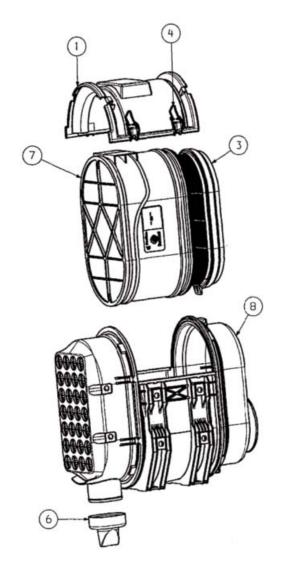
- Untight the 4 latches 4 holding the filter cover 1.
- · Remove the filter cover.
- Remove the 2 cartridges (central and security).
- Throw away the old cartridges.
- Clean the area around the cartridge seal with a rag.
- Place the cartridges in the following order :
  - Security cartridge 3
  - Central cartridge 7
- Replace the filter cover.
- Tight the 4 latches 4.

### 4.4 Drive train inspection

Periodically check that there is no play in the jaws and PTO cross pieces, turning the universal joint manually in one direction then in the other direction.

### 4.5 Check and relief valve inspection

See Instructions 1401-E00 MISTRAL - B600 - TYPHON II CHECK AND RELIEF VALVE.



# 5. TROUBLESHOOTING

# CAUTION: OBSERVE ALL SAFETY WARNINGS CONTAINED IN THIS MANUAL.

Problem	Possible origin	Possible solution
	Too much pressure drop.	To check pipes diameter.
1. Pressure issue	Relief valve damaged.	To check the opening point.
	No return valve damaged.	To check the proper operating of the No return valve.
2. Flow rate issue	Wrong Compressor speed.	To adjust the speed by taking care of the range allowed.
Z. Flow rate issue	Relief valve damaged.	To check the opening point.
	Air filter clogged.	To clean the cartridge or to replace it.
	Air pressure too much high.	To see problems 1. / 2.
3. Abnormal high temperature	Outside temperature too much high.	To respect the maximum external temperature allowed.
	Lack of oil.	To check the oil level.
	Compressor speed too much low.	To adjust the speed by taking care of the range allowed.
4. Inlet pressure drop > 75 mbar (clogging indicator red)	Air filter clogged.	To clean the cartridge or to replace it.
	Air inlet hose folded.	To check the air inlet hose.
5. Compressor doesn't operate	Torque limiter damaged.	To replace the torque limiter.
	Transmission damaged.	To consult your Service point.
	Screw Compressor damaged.	To consult your Service point.
6. Torque limiter damaged	Wrong motor / transmission management.	To consult your Truck dealer.
	Oil too much viscous.	To be in compliance with the MOUVEX Instructions.
7. Oil leak	Too much oil.	To check the oil level.
7. OII leak	Oil breather clogged.	To clean the oil breather.
8. Vibrations	Wrong motor speed.	To increase the speed by taking care of the range allowed.
	Transmission damaged.	To check the driving shaft.
	Lack of rigidity of the chassis.	To be in compliance with the Truck Manufacturer Instructions.

### 6. WARRANTY

### **6.1 Warranty claims**

The following part are considered as wear part:

- · Inlet filter cartridge
- · Compressor oil

No failure connected with wear part damage will be accepted under warranty conditions.

The following situations will void warranty for all components of the package:

- Tampering with the setting of the relief valve.
- Presence of foreign body inside the compressor body.
- Traces of damage representative of abnormal use of the package.
- · Use of non genuine parts.
- If the compressor is repaired by a repairer who is not a MOUVEX-approved repairer.
- Construction of the package not validated by our Design Office.
- Use of an oil other than BSC for a 13R/15L and 19R/22L compressor.

Before returning your equipment to the factory, you must first obtain an Equipment return approval (RMA) from our After Sales Department.

A Compressors form information shall be filled by the installer or distributor and send to MOUVEX in order to claim for a warranty.

# 6.2 24-months warranty extension with BSC3 oil

The 24-months warranty extension with BSC3 oil option increases the warranty for the screw compressor to 60 months:

- · Europe zone only,
- Only concerns the bare shaft compressor with or without multiplier, excluding packages and accessories (air filter, torque limiter, check relief valve...),
- Use of BSC3 oil (provide invoices),
- · Conditions identical to the current standard warranty.

### 7. STORAGE CONDITIONS

### 7.1 Compressor

The equipment must be systematically stored in an area sheltered from bad weather.

The equipment must bear its original protective components until it is installed in its final application.

If installation is interrupted, put back in place the original protective components or equivalent components.

### 7.2 BSC oil

In its unopened original container in a dry, frost-free and light-free place.

The maximum shelf life is approx. 60 months.

### 8. SCRAPPING

The compressor must be scrapped in compliance with the regulations in force.

During this operation, particular care must be paid to the drainage stages of the compressor.

# 9. COMPRESSORS FORM INFORMATION

Before any material return, it is required to get an authorization from MOUVEX.



# COMPRESSORS FORM INFORMATION

In order to treat correctly the warranty claims, please first complete this information form.

Thanks to return us this completed document by email as soon as possible.

Thanks to return us this completed do	cument by email as soon as possible.			
Name, adress and phone number of the customer				
<u>Material purchased by</u> : <u>Material mo</u>	unted by : Material used by :			
	◆ Person to contact for technical information :			
	<b>~</b>			
EQUIPMENT	CONCERNED			
☐ Screw compressor       ☐ Vane compressor       Type:         Delivery date:       Starting-up date:         Serial N°:       Running time estimation (hours):         Have you already replaced the equipment by a new one?       Yes       No       If yes, indicate its serial N°:				
Type of installation	OPERATING PARAMETERS			
□ Direct PTO drive     □ Belt drive system     □ Torque limiter (value) :     □ Pressure relief valve setting (value) :     □ Package DDNC     □ Package DDIC     □ Other (electric, diesel or hydraulic motor)	<ul> <li>Compressor's speed:</li></ul>			
Brief description:	Suction conditions			
(please join a drawing or pictures of the installation)	<ul> <li>☐ Air connection on truck chimney</li> <li>☐ Direct air connection</li> <li>☐ Flexible pipe between filter and compressor</li> <li>☐ Stainless steel pipe between filter and compressor</li> <li>☐ Filter type :</li> </ul>			
Description of	F THE MATTER			
Leakage Insufficient flow Blocking Noise / vibration	Insufficient pressure Other:			
IN CASE OR RETURN OF MATERIAL TO OUR FACT	ORY, PLEASE REQUEST IMPERATIVELY BEFORE SENDING			

IN CASE OR RETURN OF MATERIAL TO OUR FACTORY, PLEASE REQUEST IMPERATIVELY BEFORE SENDING
THE MATERIAL RETURN AUTHORIZATION (RMA) WHICH WILL BE PROVIDED TO YOU BY MOUVEX AFTER SALES DEPARTMENT.

rev.10/06/2020