



INSTRUCTIONS 1401-A00 e

Section	1401
Effective	June 2007
Replaces	May 2007

Original instructions

TYPHON ***SCREW COMPRESSORS***

20R/30R



BDIC



INSTALLATION
OPERATION
MAINTENANCE
SAFETY
STORAGE



This instruction only contains information common to all versions of the TYPHON. It is imperative to have the interface plans, central application instruction and list of spare parts before installing the equipment.

BLACKMER
Z.I. Plaine des Isles
F- 89000 AUXERRE
Tél. : +33 (0)3.86.49.87.16
Fax : +33 (0)3.86.49.87.17
E-mail : contact@blackmer-mouvex.com

BLACKMER
1809 Century Avenue, Grand Rapids
MICHIGAN 49509-1595 - U.S.A.
Tél. : +1 (616) 241-1611 Fax : +1 (616) 241-3752
E-mail : blackmer@blackmer.com
Internet Address: www.blackmer.com

Your distributor :

BLACKMER TRUCK SCREW COMPRESSOR

SAFETY, STORAGE, INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

MODEL : TYPHON

SAFETY INFORMATIONS



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.

NOTE :

The item numbers that follow the names of the parts correspond to the reference numbers present on the outline drawings.

SUMMARY

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REMARKS :

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

Maintenance of Blackmer 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 Blackmer compressors.

Do not remove the warning and use label stickers that are found on the compressors.

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 PROPERTY DAMAGE.

⚠ WARNING



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

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

⚠ CAUTION



Hazardous pressure can cause 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 ACCESSORIES WILL BECOME HOT DURING OPERATION AND CAN CAUSE SERIOUS PERSONAL INJURY.


⚠ WARNING



Hazardous or toxic fluids can cause serious injury.

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

⚠ WARNING



A loud noise can cause permanent body damage.

THE NOISE EMITTED BY WORKING BLACKMER 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 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 compressor.
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 :

BLACKMER COMPRESSORS ARE NOT DESIGNED FOR HANDLING LIQUID, POWDER OR CONDENSATE. TO DO SO WILL VOID THE WARRANTY.

LIFTING POINTS :

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

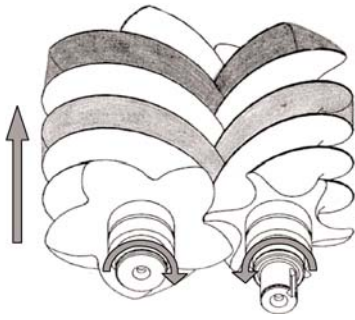


The fastening studs of the discharge flanges can be used to install a lifting lug in order to transport the compressor.



1. GENERAL DATA

1.1 PRINCIPLE OF OPERATION



The male screw and the female screw mesh and rotate in opposite directions inside the casing fitted with inlet and discharge ports.

Rotation generates a volume increase on the inner face between threads and grooves, which corresponds to inlet, and a volume reduction on the upper face, which corresponds to compression.

On the discharge port side, a set of gears synchronizes the male screw and the female screw. Thus, the screws are not in contact. The discharged air does not enter in contact with any friction part and remains clean and free from particles. .

On the drive shaft side, the female screw is driven by a set of step-up gears.

An oil pump delivers pressurized oil which circulates, lubricating gears and ball bearings.

Sealing is provided between lubricated parts and the compression stage by means of labyrinth seals. These seals do not enter in contact with the shaft and are not subject to wear.

Thanks to its technology, TYPHON compressors are reliable and have a long service life.

TYPHON compressors need very limited maintenance, which reduce vehicle downtime.

TYPHON version 20R drive speed (2000 rpm) were defined so as to drive it directly through universal joints from a P.T.O shaft. TYPHON compressor is therefore fitted within the chassis. Thanks to this system, the installation is lighter and saves space on the side of the vehicle for other accessories.

TYPHON version 30R (3000 rpm) can be directly driven by an electric or hydraulic motor, and can be driven by a diesel motor if this motor can be disengaged at its start and at its stop.

The compressor is supplied with several solutions for adapting to the application drive speed:

- 20R ; 13R/15L for mounting on a truck, the TYPHON can then be mounted on the chassis. This presents the advantage of a lighter installation and frees space on the side of the vehicle which can be used for installing an additional tank.
- 30R for an electric, hydroelectric or diesel drive. In the case of the diesel drive, this must be declutched when starting and switching off the compressor.

The 20R and 30R versions may be fitted with a SAE4 flange so that they can be mounted on diesel engines.

TYPHON BDIC packages include the following accessories:

- inlet filter
- Silencer
- valve
- anti-return valve
- chair and belt pulley drive
- Filter clogging gauge
- Cover
- Air/air cooler



Our package are delivered without oil. The use of a compressor with an oil level that is not located between the two limits indicated by the gauge can lead to important property damage and serious injuries.

1.2 CHARACTERISTICS

These operating characteristics are given in the indicative operation conditions : ambient temperature and air inlet temperature 20°C, atmospheric pressure : 1013 mbars.

Characteristics of bare shaft end compressor and direct drive package :

	Output and power according to drive speeds			Weight
Speed (rpm) TYPHON N-20R	1200	1600	2000	155
Speed (rpm) TYPHON N-30R	1800	2400	3000	155
Speed (rpm) TYPHON BD package pulley ratio 1 :1	1200	1600	2000	BDIC 350
Speed (rpm) TYPHON BD package pulley ratio 1 :1,1	1075	1434	1792	BDIC 350
Speed (tr/min) TYPHON BD package pulley ratio 1 :1,25	960	1280	1600	BDIC 350
Speed (tr/min) TYPHON BD package pulley ratio 1 :1,4	854	1139	1423	BDIC 350
Inlet output in m ³ /h à 2.3 bar	-	700	950	
Power in kw at 2.3 bar	-	43	70	
Inlet output in m ³ /h à 2.0 bar	470	720	980	
Power in kw at 2.0 bar	35	48	64	

Belt pulley transmission has return of about 95%, not reflected in the table above.

1. GENERAL DATA (continued)

1.3 OPERATING RANGES

These operating ranges give the conditions that must be respected on mounting and packaging of the TYPHON compressors, in order to be able to benefit from the guarantees for these pieces of equipment.

1.3.1 CONDITIONS AT SUCCION

The compressor inlet suction air must be filtered in order to eliminate particles bigger than 5 µm.

The maximum pressure drop at suction must be lower than 75 mbar.

A clogging indicator system must permit changing the suction filter when it creates a pressure drop greater than 75 mbar.

The maximum acceptable temperature at suction is given in the tables below, as a function of equipment operating conditions :

	Maximum temperatures and pressures			
	1200	2000	1600	2000
Speed (rpm) TYPHON N-20R	1200	2000	1600	2000
Speed (rpm) TYPHON N-30R	1800	2400	2400	3000
Speed (rpm) TYPHON BD package pulley ratio 1 :1	1200	1600	1600	2000
Speed (rpm) TYPHON BD package pulley ratio 1 :1,1	1075	1434	1434	1792
Speed (tr/min) TYPHON BD package pulley ratio 1 :1,25	960	1280	1280	1600
Speed (tr/min) TYPHON BD package pulley ratio 1 :1,4	854	1139	1139	1423
Discharge pressure of the compressor (bar)	2,0	2,0	2,3	2,3
Max inlet temperature possible for pressure (°C)	38	42	35	40

1.3.2 RECOMMENDED DRIVE CONDITIONS

Maximum torque values on operating for a compressor discharge pressure of 2.5 bar	Maximum speeds (rpm)	Maximum operating torque (Nm)
Speed (rpm) TYPHON N-20R	2000	345
Speed (rpm) TYPHON N-30R	3000	225
Speed (tr/min) TYPHON BD package pulley ratio 1 :1	2000	345
Speed (tr/min) TYPHON BD package pulley ratio 1 :1,1	1792	385
Speed (tr/min) TYPHON BD package pulley ratio 1 :1,25	1600	431
Speed (tr/min) TYPHON BD package Pulley ratio 1 :1,4	1423	485

Maximum torque values on starting for a compressor discharge value of 2.5 bar	Maximum speeds (rpm)	Maximum operating torque (Nm)
Speed (rpm) TYPHON N-20R	2000	500
Speed (rpm) TYPHON N-30R	3000	500
Speed (rpm) TYPHON BD package pulley ratio 1 :1	2000	469
Speed (rpm) TYPHON BD package pulley ratio 1 :1,1	1792	532
Speed (rpm) TYPHON BD package pulley ratio 1 :1,25	1600	599
Speed (rpm) TYPHON BD package pulley ratio 1 :1,4	1423	673

The transmission lines (universal joint, pulley belt, etc.) must be sized so as to be able to accept the loads above.

Direct drives must be protected by a torque limiter set at 610 Nm. When using a 1: 1,5 inverter, the torque limiter setting must be 750 Nm. Blackmer belt pulley packages are designed so that the sliding of the pulleys protects the transmission.

It is the responsibility of the designers of other packages to check that their design protects the transmission (and in particular the universal joint on the truck) if the compressor blocks.



The non balancing of the drive shafts can lead to mechanical ruptures that are susceptible of causing important property damage and/or serious injuries.

The shafts of the motors driving the TYPHON compressors must be aligned within one angle degree on the TYPHON shaft.

in the case universal joint drive, the motor and compressor side shafts must be parallel within one degree. The universal joint plates must be parallel within one degree. See specific installation conditions in § 2.4.2.



Not following assembly instruction can lead to mechanical ruptures that may create major property damage and/or serious injuries.

1. GENERAL DATA (continued)

1.3.3 MAXIMUM DISCHARGE PRESSURE

The maximum acceptable pressure at discharge is indicated in the tables below, as a function of equipment operating conditions :

	Speed ranges (rpm)	Maximum discharge pressure (relative bar)
Speed (rpm) TYPHON N-20R and DD corresponding package	1200 - 1600	2,0
	1600 - 2000	2,3
Speed (tr/min) TYPHON N-30R and DD corresponding package	1800 - 2400	2,0
	2400 - 3000	2,3
TYPHON BD package Pulley ratio 1 : 1.00	1200 - 1600	2,0
	1600 - 2000	2,3
TYPHON BD package Pulley ratio 1 : 1.12	1075 - 1434	2,0
	1434 - 1792	2,3
TYPHON BD package Pulley ratio 1 : 1.25	960 - 1280	2,0
	1280 - 1600	2,3
TYPHON BD package Pulley ratio 1 : 1.40	853 - 1138	2,0
	1138 - 1422	2,3

The pressures given in the tables above correspond to the valve opening start pressure. In a period of 60 seconds, it is acceptable to have a pressure of 0.2 bar higher when the valve passes the complete flow rate.

1.3.4 ACCEPTABLE OIL PRESSURE RANGE

The oil pressure is measured at the tap point located on the synchromesh gear box (item G on the outline drawings) :

	Mini pressure (bar)	Maxi pressure (bar)
TYPHON 20R & BDNC	0,2	2,3
TYPHON 30R	0,2	3,0

CAUTION

In normal operation, the compressor and its surrounding parts may reach high temperatures (up to 200°C). Make sure that you do not put sensitive components close to a heat source, and affix plates warning users that the compressor is hot, to avoid any burn hazards.

CAUTION

Having the compressor run above its maximal temperature may lead to serious body injuries or property damages.

1.3.5 VARIANTS POSSIBLE

1.3.5.1 Bare shaft end compressor, without accessories

The table attached lists the variants possible for the order. An example of a complete reference is given below.

TYPHON N 20R-

- A TYPHON compressor fitted with 2 shaft outlets, one giving maximum speed at 1300 rpm, clockwise for a user placed in front of the shaft and the other giving maximum speed at 1500 rpm counterclockwise.

Variant	Value	Short description
ASSEMBLY	Maximum flow for 2000 rpm, clockwise drive	20R-
	Maximum flow for 3000 rpm, clockwise drive	30R-
TEMPERATURE	Standard	-
	Optimized to reduce outlet temperature	ND-

TYPHON 20R



1. GENERAL DATA (continued)

1.3.5.2 Belt pulley package

The table attached lists the variants possible for the order. An example of a complete reference is given below.

TYPHON 20RBDICL-1.40-2.3B-ST-

- A TYPHON rear intercooler belt pulley package
- Pulley drive ratio: 1 : 1.40
- Setting of safety valve: 2.3 bar
- The fan is monitored by the package

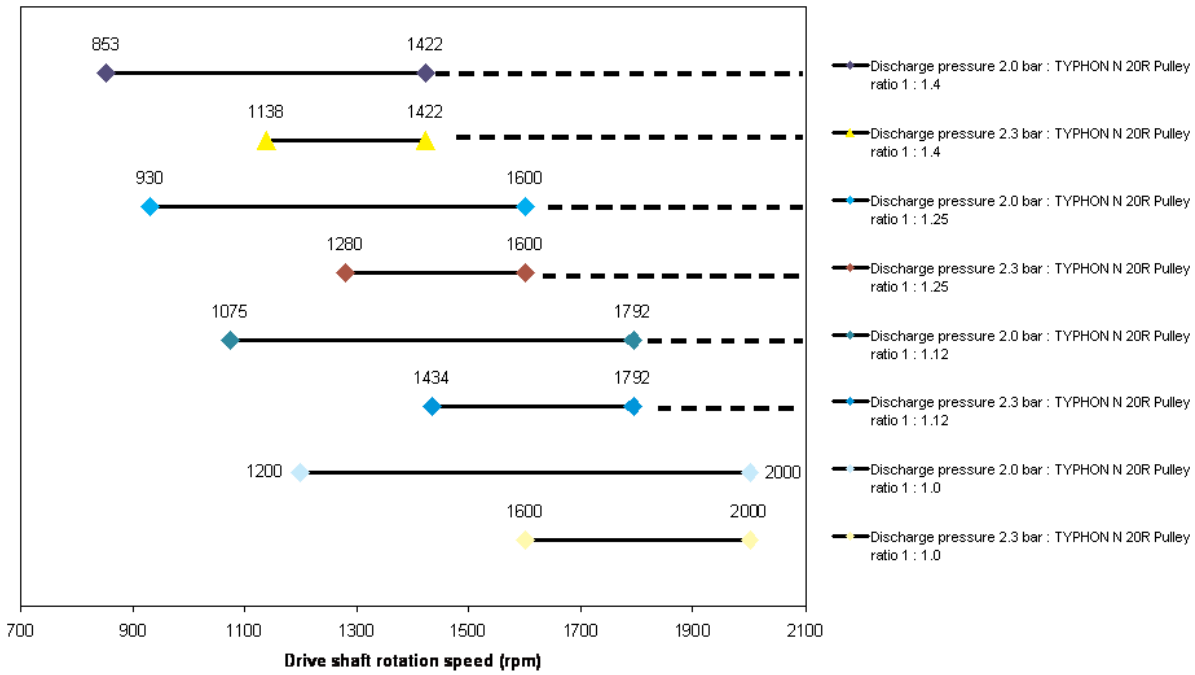
Variant	Value	Short description
ASSEMBLY	Front package (compressor side drive plate)	20RBDNCR
	Rear package (drive plate on opposite side to compressor)	20RBDNCL
	Front package (compressor side drive plate) with package outlet on the front	AV.FRON-
SPECIAL VARIANT	Pulley ratio 1:1	-1,00-
	Pulley ratio 1:1.12	-1,12-
	Pulley ratio 1:1.25	-1,25-
	Pulley ratio 1:1.40	-1,40-
FIRST EQUIPMENT	WITH relief valve, opening at 2.0 bar compressor discharge	2,0B-
	WITH relief valve, opening at 2.3 bar compressor discharge	2,3B-
FAN	Done by Blackmer package. The installer has to supply 24V to the package.	ST-
	Done by the installer (see application instructions).	EXT-

TYPHON BDIC

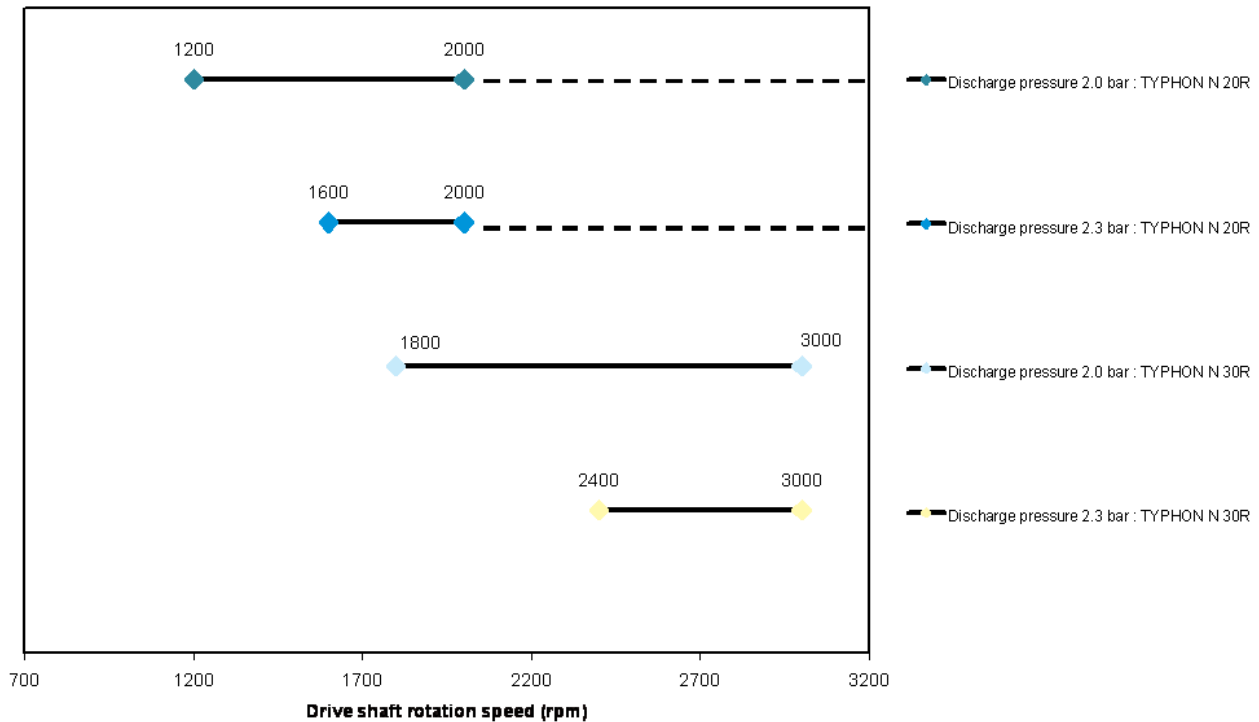


1. GENERAL DATA (continued)

Ranges of acceptable drive speeds according to the fitting variation and discharge pressure



Ranges of acceptable drive speeds according to the fitting variation and discharge pressure



1.3.6 ADDITIONAL DOCUMENTATION

The table below gives the list of instructions in addition to this central instruction.

TYPHON application	Interface plan	Application instruction	Parts list
20R/30R	57094	NT 1401-Q00	N/A
BDIC	58678 / 58679	NT 1401-S00	1401-S01 1401-S02

2. USE OF COMPRESSOR

2.1 LUBRICANT RECOMMENDATIONS

The Blackmer screw compressor may operate in their 20R and 30R configuration with BLACKMER BSC oil.

A start up oil change has to be made after one week or 10 working hours. Not performing this oil change will void the warranty.

For the first week or 10 working hours, you can choose a standard mineral oil. The standard mineral oil grade will be selected according to the ambient temperature under which the compressor will be operated :

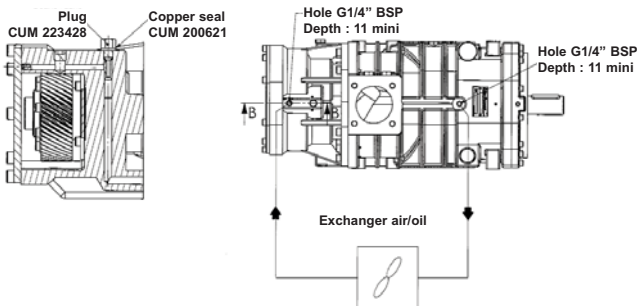
- Below -10°C. SAE 10 W 40
- Between -10°C and 30°C . . . SAE 15 W 40
- Above 30°C SAE 15 W 50

With BSC oil, oil change is recommended every year or 500 working hours.

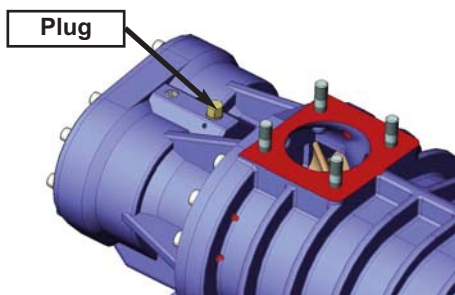
BSC oil used with compressors fitted with Blackmer 13R/15L multipliers must be changed each 9 months or after 300 working hours.

Compressor		BSC oil		
		1first oil change (h)	Oil change	Warranty period (year)
TYPHON	20R / 30R	10	500 h / 1 year	3
	13R/15L	10	300 h / 9 months	3

Compressors may be used with an external cooler; ask for plan 61699 from Blackmer technical support for further details.



If the connection marked on the joint view has 6 hollow surfaces, the compressor is designed to operate without an external cooler. If the connection marked on the joint view has a hexagonal head, the compressor is designed to operate with an external cooler.



⚠ CAUTION

Depending on the type of cooling, using the wrong screw will quickly lead to damage, not covered by the warranty, to the compressor and may lead to serious injury and/or serious damage to equipment.

2.2 FILLING OF LUBRICANT

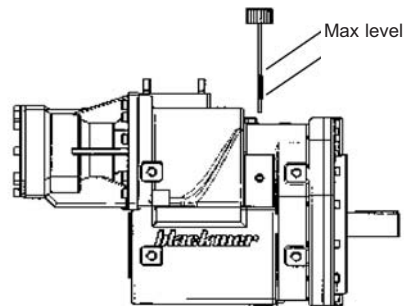
⚠ CAUTION

Our package are delivered without oil. The use of a compressor with an oil level that is not located between the two limits indicated by the gauge can lead to important property damage and serious injuries.

The quantity of oil for each compressor is approximately 5 l. Before starting the system, fill the casing with oil so that the oil level is set between the min and max value of the gauge.

NB : a residual volume of 0.5 l of oil may be pre-sent inside the compressor when it leaves the factory.

After filling, the level must under no circumstances exceed the maximum marker on the oil gauge. (the level is taken after the gauge has been completely screwed onto the filling tube).



2.3 START-UP PROCEDURE

- The compressor must be started with the discharge valves open.
- When it is started for the first time, check the compressor rotation direction (clockwise direction for an observer facing the compressor shaft). Also check rotation speed (refer to § 1.2.1 and 1.2.2)
- The compressor shall be stopped without any counterpressure at discharge.
- At commissioning, check that the combinations of rotation speed and discharge pressure of the compressors are in conformity with those indicated in § 1.2.

⚠ CAUTION

Before any equipment startup, it is necessary to check the coherency between the motor rotation direction and the compressor operating direction. A startup with rotation in the wrong direction will lead to irreversible property damage on the compressors that is not covered by the guarantee.

2. USE OF COMPRESSOR (continued)

CAUTION

During operation, the temperature of the surface of a compressor and nearby parts can be in the region of 200°C. The compressor and the parts located nearby are thus susceptible of provoking serious burns and property damage. Be careful to not approach elements that are sensitive to heat and affix plates informing users that the compressor is hot, to prevent any risk of burns.

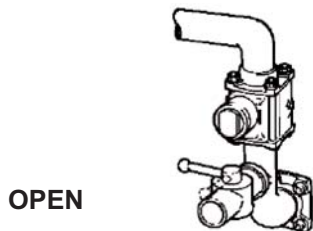
A transparent self-adhesive label sticker on which instructions of use are indicated is provided with the compressor.

2.4 START-UP PROCEDURE - VEHICLE MOUNTED

STEP 1

BEFORE starting compressor, open all air valves necessary to vent the tank and compressor to atmosphere.

Verify there is no possibility of operating at pressure before compressor reaches correct speed.



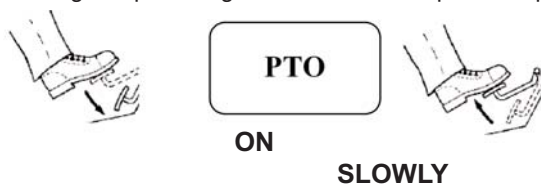
STEP 2

Start the engine and run with standard speed.

Depress clutch and engage the PTO.

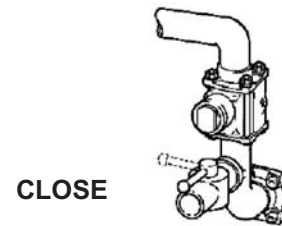
Release the clutch SLOWLY.

Set engine speed to give the correct compressor speed.



STEP 3

Close all valves and proceed to pressurize the tank and discharge the cargo.



NOTICE :

COMPRESSOR MUST OPERATE AT FIXED SPEED WITHIN THE COMPRESSOR MODEL SPEEDLIMITS. SPEED MUST REMAIN CONSTANT THROUGHOUT THE OFF LOADING OPERATION.

2.5 SHUTTING DOWN PROCEDURE - VEHICLE MOUNTED

STEP 1

Depress the clutch and disengage the PTO.



STEP 2

Reduce engine speed to idle.

CAUTION

ALWAYS DISENGAGE THE DRIVE BEFORE SLOWING ENGINE DOWN.

STEP 3

Release the clutch.



NOTICE :

DO NOT attempt to restart the compressor in the following instances :

- If there is still pressure or vacuum in the system. In this instance, open the vent valve first, then restart the compressor. Once the pump is up to speed, close the vent valve slowly.
- If the compressor input speed is too slow.

3. MAINTENANCE

3.1 MAINTENANCE SCHEDULES

After every cleaning of the truck

Always run the compressor for 15 minutes to remove any water that inadvertently gets into the piping. DO NOT fog or introduce anti-corrosive liquids into the compressor to prevent corrosion : Use of liquids in the compressor will cause failure.

After first 10 hours or first week operating

Change the compressor oil and clean the magnetic plugs.

According to the prescriptions of § 2.1

Change the compressor oil and clean the magnetic plugs.

Weekly

1. The compressor should be run once a week for at least 15 minutes to prevent moisture from collecting inside. This will reduce the risk of corrosion damage to the compressor and other equipment in the piping.
2. Inspect and clean air filter. Clean the outer surfaces and the compressor cooling wings, and the multiplier inlet grille. Inspect DAILY if operating in dirty or severe environment. Check the condition of the inlet filter hose for splits and tears. Replace or repair as necessary.
3. Inspect compressor, system piping and components. Clean or repair as necessary.
4. Check power transmission line (pulley, shaft, torque limiter...).

Per manufacturer's recommendations

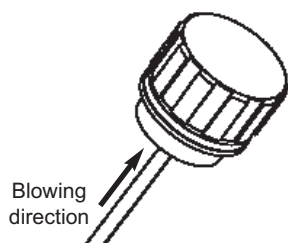
Lubricate the universal seal.

Monthly

1. Check the relief valve(s) for wear and proper settings. Replace or adjust as necessary.
2. Check that the check valve works properly, replace as necessary.
3. Check oil level, add the necessary volume if necessary. Check for cleanliness the breather inside the oil gauge, clean with an air blower if necessary.



THE BLOWING OF OIL GAUGE CAN CAUSE PERSONNAL INJURY OR PROPERTY DAMMAGE. IT IS MANDATORY TO CARRY APPROPRIATE PROTECTIONS (GLOVES, GLASSES...) TO AVOID RISKS OF PERSONNAL INJURY.



3.2 COMPRESSOR OIL CHANGE PROCEDURE

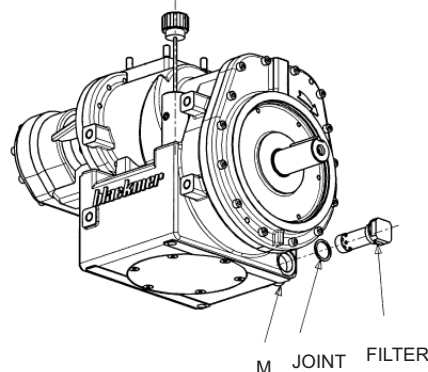
Oil gauge See § 2.1.

Unscrew and remove the oil filter with its seal (marked C on the outlines drawings). Drip-drain all the oil contained in the casing.

Carefully clean the oil filter with solvent. Blow out all impurities with a compressed air blast.

Clean the magnetic plugs (marked M on the outlines drawings).

After checking that no particles remain in the filter, reinstall it making sure that the seal is in good condition. Fill the compressor. See § 2.2.



3.3 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 material inside the compressor body.
- Traces of damage representative of abnormal use of the package.
- Use of non genuine parts.
- Construction of the package not validated by our Design Office.

A return sheet shall be filled by the installer or distributor and send to Blackmer in order to claim for a warranty.

4. STORAGE CONDITIONS


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.

5. AFTER-SALES RETURN FORM

This Return Form is required to be completed and attached to the equipment for any guarantee claim.

	RETURN MATERIAL FORM COMPRESSORS	FORM BDLA / PP / MW F-SAW-001-190901-A
Blackmer After Sales Service 21 de la Daine des Isles 89000 ALKERRE	Tel : (33) 3 86 49 86 03 Fax : (33) 3 86 49 86 48	Date : _____ Follow by : _____ File : _____
In order to properly deal with the return material, please fill in this form		
A - Name and address of user _____ _____ People to contact : _____ phone Nr: _____		
B - Name and address of installer _____ _____ People to contact : _____ phone Nr: _____		
C - Material's serial number _____ D - starting up date _____ Running time estimation _____		
I - Installation details	F - Operating parameters	
Propshaft drive system (direct PTO drive) Torque limiter Pressure relief valve setting (value) <input type="text"/> Belt drive system Package air cooler Package RTI Other (electric, thermic or hydraulic motor) _____ _____ _____ _____	compressor's speed <input type="text"/> Operating pressure <input type="text"/> motor speed (tachometre) at the time of the incident <input type="text"/> PTO ratio : <input type="text"/> Product transferred _____ _____ _____	
G - Suction conditions		
<input type="checkbox"/> Air connection on truck chimney <input type="checkbox"/> direct air connection <input type="checkbox"/> flexible pipe between filter and compressor <input type="checkbox"/> Inox pipe between filter and compressor		
H - DESCRIPTION OF THE FAILURE		
Blocking Leakage Noise, vibration Other _____ _____ _____ _____		
I- Has the machine been replaced by a new one? if yes which is the serial number <input type="text"/> J- Has the machine been replaced by a removed one? if yes which is the serial number <input type="text"/>		
K - Remarks and comments of the user about the problem :		
_____ _____ _____ _____		
Please send us back this completed form by fax or E mail as quick as possible.		