IT **MANUALE ISTRUZIONI PER L'USO E LA MANUTENZIONE**

GB **INSTRUCTION MANUAL FOR USE AND MAINTENANCE**

FR **NOTICE D'EMPLOI ET D'ENTRETIEN**

DE **GEBRAUCHS-UND WARTUNGSANLEITUNGEN**

ES **MANUAL DE INSTRUCCIONES DE USO Y MANTENIMIENTO**

Battioni ®
Pagani

# BLM

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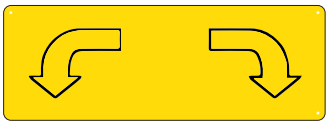
# ЗАДЪЛЖИТЕЛНА СИГНАЛИЗАЦИЯ ЗА БЕЗОПАСНОСТ, КОЯТО ПРОИЗВОДИТЕЛЯТ НА ИНСТАЛАЦИЯТА ТРЯБВА ДА ПОСТАВИ НА ВИДИМО МЯСТО В БЛИЗОСТ ДО ЛОБОВАТА ПОМПА ЗА ВАКУУМ/ НАЛЯГАНЕ BLM

ЛИЧНИ ПРЕДПАЗНИ СРЕДСТВА, ЧИЕТО ИЗПОЛЗВАНЕ Е ЗАДЪЛЖИТЕЛНО



ИНДИКАЦИЯ НА ПОСОКАТА НА ВЪРТЕНЕ НА ДРЪЖКАТА ЗА ИЗБИРАНЕ НА ФАЗИТЕ НА ЗАСМУКВАНЕ ИЛИ КОМПРЕСИРАНЕ.

**ПОСТАВЕТЕ ЗНАЦИТЕ ЗА БЕЗОПАСНОСТ НА ВИДИМО МЯСТО И В БЛИЗОСТ ДО ПОМПАТА**

## УСЛОВИЯ И ГРАНИЦИ НА УПОТРЕБА - СПИСЪК НА ОПАСНОСТИТЕ

***За страните от Общия пазар монтажът трябва да отговаря на изискванията на директива 2006/42/ЕО и последващите изменения, докато за другите страни той трябва да отговаря на местната нормативна уредба в областта на безопасността.***
**Тази лобова помпа за вакуум/налягане е проектирана с функцията да създава вакуум или налягане в свързания към нея резервоар.**

***Във вътрешността на лобовата помпа за вакуум/налягане в никакъв случай не трябва да навлизат каквито и да е течности, прахове или твърди материали, тъй като биха могли да предизвикат счупването ѝ. Следователно по инсталацията трябва да поставите предпазни клапани за случаи на преливане.***
***Всяка друга употреба на лобовата помпа за вакуум/налягане, с изключение на изрично посочената, трябва да се смята за абсолютно забранена, непредвидена от производителя и следователно високо опасна.***

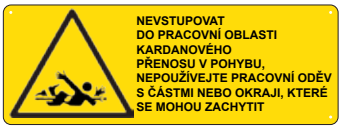
***Не използвайте лобовата помпа за вакуум/налягане за транспортиране на запалими и/или взривоопасни течности и материали, както и на материали, които отделят запалими газове.***
***Не използвайте лобовата помпа за вакуум/налягане в потенциално експлозивни атмосфери.***
***Никога не отстранявайте защитите, поставени по помпата, и проверявайте изправността им при всяко използване на машината.***
***Всички намеси трябва да се извършват при спряла машина и от квалифициран персонал.***
***Неквалифициран персонал няма право да работи по лобовата помпа за вакуум/налягане или близо до нея.***
***Фирма Battioni Pagani ® не носи отговорност за проблеми, счупвания и злополуки вследствие на неприлагането на съдържащите се в ръководството инструкции, на несъблюдаването на действащата нормативна уредба и на неприлагането на необходимото внимание по време на работа и на операциите по поддръжка или ремонт, дори и да не са изрично посочени в това ръководство.***

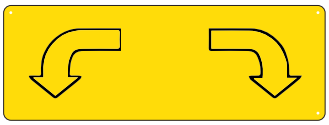
**Неспазването на изброените в това ръководство инструкции може да доведе до възникване на следните опасни ситуации:**

- Опасност от притискане, предизвикана от масата на лобовата помпа за вакуум/налягане по време на преместване и транспортиране;
- Опасност от заплитане в предавателните органи в случай на отстраняване на съответните защити (избягвайте облекло с широки ръкави, вратовръзки, гривни, гердани и т.н.);
- Опасности от топлинен характер, предизвикани от температурите, които може да достигне лобовата помпа за вакуум/налягане;
- Опасност, предизвикана от генерирания шум и от неизползването на лични предпазни средства;
- Опасност от срязване на оператора по време на контролното изпитване с разкачени тръби за засмукване и подаване на лобовата помпа за вакуум/налягане
- Опасност от изхвърляне на твърди и течни материали вследствие на сериозно счупване на лобовата помпа за вакуум/налягане;

# POVINNÉ BEZPEČNOSTNÍ ZNAČENÍ, KTERÉ VÝROBCE SYSTÉMU MUSÍ UMÍSTIT DO POLOHY VIDITELNÉ V BLÍZKOSTI TLAKOVÉHO VAKUOVÉHO ČERPADLA S VÝSTUPKY BLM

OSOBNÍ OCHRANNÉ PROSTŘEDKY, JEJICHŽ POUŽITÍ JE POVINNÉ





OZNAČENÍ SMĚRU OTÁČENÍ RUKOJETI PRO VÝBĚR FÁZÍ SÁNÍ A KOMPRESE.

**UMÍSTĚTE BEZPEČNOSTNÍ ZNAČKY VE VIDITELNÉ POLOZE A V BLÍZKOSTI ČERPADLA**

## PODMÍNKY A LIMITY POUŽITÍ - SEZNAM NEBEZPEČÍ

***Instalace musí vyhovovat, pokud jde o země se společným trhem, požadavkům směrnice 2006/42/ES ve znění pozdějších předpisů, zatímco u jiných zemí musí v souladu s místními bezpečnostními předpisy.***
Toto tlakové vakuové čerpadlo s výstupky bylo navrženo s funkcí vytváření vakua nebo tlaku uvnitř nádrže k němu připojené.

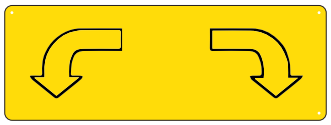
***Do tlakového vakuového čerpadla s výstupky by za žádných okolností neměly vniknout kapaliny, prášky nebo pevné materiály jakéhokoliv druhu, protože by mohly způsobit jeho rozbití. Proto je nutné systém vybavit přepouštěcími pojistnými ventily.***
***Jakékoliv jiné použití tlakového vakuového čerpadla s výstupky, s výjimkou toho specifikovaného, musí být považováno za přísně zakázané, nepředvídané výrobcem, a proto vysoce nebezpečné.***
***Nepoužívejte tlakové vakuové čerpadlo s výstupky k manipulaci s hořlavými nebo výbušnými kapalinami a materiály a pro materiály, které uvolňují hořlavé plyny.***
***Nepoužívejte tlakové vakuové čerpadlo s výstupky v prostředí s nebezpečím výbuchu.***
***Nikdy neodstraňujte ochrany umístěné na čerpadle a kontrolujte jejich účinnost při každém použití stroje.***
***Jakýkoli zásah musí být proveden na zastaveném stroji a kvalifikovaným personálem.***
***Nekvalifikovaní pracovníci nejsou oprávněni pracovat na tlakovém vakuovém čerpadlu s výstupky nebo v jeho blízkosti.***
***Společnost Battioni Pagani ® nebude odpovědná za nepříjemnosti, poruchy a nehody způsobené nedodržením pokynů obsažených v tomto návodu, nedodržením platných předpisů a neuplatněním důkladné kontroly během manévru, údržby nebo oprav, i když tak není v tomto návodu výslovně uvedeno.***

**Nedodržení pokynů, které jsou uvedeny v tomto návodu, může mít za následek následující rizika:**

- Nebezpečí stlačení způsobené hmotností tlakového vakuového čerpadla s výstupky během jeho pohybu a přepravy;
- Nebezpečí zapletení v převodových orgánech, pokud jsou odstraněny příslušné ochrany (nenoste oblečení s širokými rukávy, kravaty, náramky, náhrdelníky atd.);
- Nebezpečí způsobené teplotami, kterých může tlakové vakuové čerpadlo s výstupky dosáhnout;
- Akustické nebezpečí způsobené hlukem a nepoužitím osobních ochranných pomůcek;
- Nebezpečí střihu pro obsluhu při zkoušce s odpojeným sacím a výtlačným potrubím tlakového vakuového čerpadla s výstupky;
- Nebezpečí vymrštění pevných a kapalných materiálů jakožto důsledek vážného poškození tlakového vakuového čerpadla s výstupky.

# OBLIGATORISK SIKKERHEDSSKILTNING, SOM FABRIKANTEN AF ANLÆGGET SKAL PLACERE I SYNLIG POSITION TÆT PÅ VAKUUM-/VINGEPUMPE BLM

PERSONLIGE VÆRNEMIDLER, SOM DET ER OBLIGATORISK AT BRUGE



ANGIVELSE AF HÅNDTAGETS ROTATIONSRETNING FOR AT VÆLGE SUGE- ELLER KOMPRIMERINGSFASER.

**PLACÉR SIKKERHEDSSKILTE I EN SYNLIG POSITION OG I NÆRHEDEN AF PUMPEN**

## BRUGSBETINGELSER OG -BEGRÆNSNINGER

***Installationen skal være i landene i det europæiske fællesmarked være overensstemmelse med direktiv 2006/42/EF og efterfølgende ændringer, mens den for andre lande skal overholde de lokale sikkerhedsforskrifter.***
Denne vakuumpumpe/vingepumpe er designet til at oprette vakuum eller tryk inde i en tank, der er tilsluttet den.

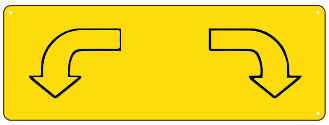
***Der må under ingen omstændigheder komme væsker, støv eller faste materialer af nogen art trænge ind i vakuum-/vingepumpen, da det kan forårsage brud. Det er derfor nødvendigt at udstyre systemet med sikkerhedsaflastningsventiler.***
***Al anden brug af vakuum-/vingepumpen end den specificerede skal betragtes som strengt forbudt, ikke forudset af fabrikanten og derfor til stor fare.***
***Brug ikke vakuum-/vingepumpen til at flytte brandfarlige og/eller eksplosive væsker og materialer og til materialer, der frigiver brandfarlige gasser.***
***Brug ikke vakuum-/vingepumpen i eksplosionsfarlig atmosfære.***
***Fjern aldrig beskyttelserne på pumpen, og kontroller, at de fungerer, hver gang maskinen bruges.***
***Ethvert indgreb skal udføres med standset maskine og af kvalificeret personale.***
***Ukvalificeret personale har ikke tilladelse til at arbejde på eller i nærheden af vakuum-/vingepumpen.***
***Battioni Pagani ® er ikke ansvarlig for ulemper, brud og ulykker på grund af manglende overholdelse af instruktionerne i manualen, manglende overholdelse af gældende regler og manglende anvendelse af fornøden omhu under manøvrering, vedligeholdelse eller reparation, selvom ikke specifikt nævnt i denne manual.***

Manglende overholdelse af anvisningerne i denne betjeningsvejledning kan føre til, at disse farer opstår:

- Fare for knusning på grund af vægten fra vakuumpumpen/vingepumpen under håndtering og transport;
- Fare for indvikling i transmissionsorganerne hvis de særlige beskyttelser fjernes (undgå beklædning med brede ærmer, slips, armbånd, halskæder osv.);
- Fare på grund af temperaturerne, som vakuumpumpen/vingepumpen kan nå op på;
- Akustisk fare på grund af støj og manglende brug af høreværn;
- Fare for knusning af operatøren under test med frakoblet indsugnings- og udledningsrør i vakuum-/vingepumpen
- Fare for udslyngning af faste og flydende materialer efter et alvorligt brud på vakuum-/vingepumpen;

# ΥΠΟΧΡΕΩΤΙΚΕΣ ΣΗΜΑΝΣΕΙΣ ΑΣΦΑΛΕΙΑΣ ΠΟΥ Ο ΚΑΤΑΣΚΕΥΑΣΤΗΣ ΤΗΣ ΕΓΚΑΤΑΣΤΑΣΗ ΠΡΕΠΕΙ ΝΑ ΤΟΠΟΘΕΤΕΙ ΣΕ ΕΥΔΙΑΚΡΙΤΑ ΣΗΜΕΙΑ ΚΑΙ ΚΟΝΤΑ ΣΤΗΝ ΑΝΤΛΙΑ ΚΕΝΟΥ/ΠΙΕΣΗΣ ΜΕ ΠΤΕΡΥΓΙΑ BLM

ΜΕΣΑ ΑΤΟΜΙΚΗΣ ΠΡΟΣΤΑΣΙΑΣ ΥΠΟΧΡΕΩΤΙΚΗΣ ΧΡΗΣΗΣ



ΕΝΔΕΙΞΗ ΤΗΣ ΦΟΡΑΣ ΠΕΡΙΣΤΡΟΦΗΣ ΤΗΣ ΛΑΒΗΣ ΓΙΑ ΤΗΝ ΕΠΙΛΟΓΗ ΤΩΝ ΣΤΑΔΙΩΝ ΑΝΑΡΡΟΦΗΣΗΣ Η ΣΥΜΠΙΕΣΗΣ.

**ΤΟΠΟΘΕΤΗΣΤΕ ΤΙΣ ΣΗΜΑΝΣΕΙΣ ΑΣΦΑΛΕΙΑΣ ΣΕ ΕΥΔΙΑΚΡΙΤΑ ΣΗΜΕΙΑ ΚΑΙ ΚΟΝΤΑ ΣΤΗΝ ΑΝΤΛΙΑ**

# ΠΡΟΫΠΟΘΕΣΕΙΣ ΚΑΙ ΠΕΡΙΟΡΙΣΜΟΙ ΧΡΗΣΗΣ - ΛΙΣΤΑ ΚΙΝΔΥΝΩΝ

***Η εγκατάσταση πρέπει να συμμορφώνεται, για τις χώρες της Κοινής Αγοράς, με την Οδηγία 2006/42/ΕΚ και μεταγενέστερες τροποποιήσεις, ενώ για τις άλλες χώρες πρέπει να συμμορφώνεται με την τοπική Νομοθεσία σε θέματα ασφάλειας.***
Αυτή η αντλία κενού/πίεσης με πτερύγια έχει σχεδιαστεί με σκοπό τη δημιουργία κενού ή πίεσης στο εσωτερικό μιας δεξαμενής που είναι συνδεδεμένη με αυτή.

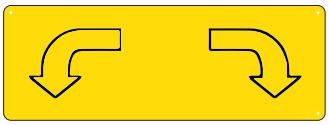
***Στο εσωτερικό της αντλίας κενού/πίεσης με πτερύγια δεν πρέπει να εισέρχονται, σε καμία περίπτωση, υγρά, σκόνη ή στερεά υλικά οποιουδήποτε είδους διότι ενδέχεται να προκαλέσουν την θραύση της. Είναι επομένως απαραίτητο η εγκατάσταση να είναι εξοπλισμένη με βαλβίδες υπερπλήρωσης ασφαλείας.***
***Οποιαδήποτε άλλη χρήση της αντλίας κενού/πίεσης με πτερύγια εκτός από εκείνη που ορίζεται απαγορεύεται αυστηρά, δεν προβλέπεται από τον κατασκευαστή και επομένως είναι αυξημένης επικινδυνότητας.***
***Μη χρησιμοποιείτε την αντλία κενού/πίεσης με πτερύγια για να μεταφέρετε εύφλεκτα ή/και εκρηκτικά υγρά και υλικά καθώς και υλικά που εκλύουν εύφλεκτα αέρια.***
***Μη χρησιμοποιείτε την αντλία κενού/πίεσης με πτερύγια σε δυνητικά εκρηκτικές ατμόσφαιρες.***
***Μην αφαιρείτε ποτέ τις προστασίες που διαθέτει η αντλία και επαληθεύστε την αποτελεσματικότητά τους κάθε φορά που χρησιμοποιείτε το μηχάνημα.***
***Οποιαδήποτε παρέμβαση πρέπει να εκτελείται με το μηχάνημα ακινητοποιημένο και από εξειδικευμένο προσωπικό.***
***Το μη εξειδικευμένο προσωπικό δεν είναι εξουσιοδοτημένο να εργάζεται στην αντλία κενού/πίεσης με πτερύγια ή κοντά σε αυτή.***
***Η Battioni Pagani ® δεν ευθύνεται για τυχόν προβλήματα, θραύσεις και ατυχήματα που οφείλονται στη μη εφαρμογή των οδηγιών που περιέχονται στο εγχειρίδιο, στη μη τήρηση των ισχυόντων κανονισμών και στη μη εφαρμογή της δέουσας προσοχής κατά τη διάρκεια του χειρισμού, των εργασιών συντήρησης ή επισκευής, ακόμη και αν δεν αναφέρονται ρητά στο παρόν εγχειρίδιο.***

**Η μη τήρηση των προϋποθέσεων που περιέχει το παρόν εγχειρίδιο μπορεί να επιφέρει τους ακόλουθους κινδύνους:**

- Κίνδυνος σύνθλιψης που μπορεί να προκληθεί από την αντλία κενού/πίεσης με πτερύγια κατά τη διάρκεια της μετακίνησης και της μεταφοράς.
- Κίνδυνος εμπλοκής στα όργανα μετάδοσης κίνησης σε περίπτωση αφαίρεσης των ειδικών προστασιών (μη φοράτε ρούχα με μακριά μανίκια, γραβάτες, βραχιόλια, κολιέ, κτλ.).
- Κίνδυνοι θερμικής φύσεως που οφείλονται στη θερμοκρασία που αναπτύσσεται στην αντλία κενού/πίεσης με πτερύγια.
- Κίνδυνος που οφείλεται στο θόρυβο που παράγει η συσκευή και στη μη χρήση μέσων ατομικής προστασίας.
- Κίνδυνος κοπής του χειριστή κατά το δοκιμαστικό στάδιο με τους σωλήνες αναρρόφησης και παροχής αποσυνδεδεμένους από την αντλία κενού/πίεσης με πτερύγια.
- Κίνδυνος εκτόξευσης στερεών υλικών και υγρών ύστερα από σημαντική θραύση της αντλίας κενού/πίεσης με πτερύγια.

## MANDATORY SAFETY SIGNS THAT MUST BE AFFIXED BY THE MANUFACTURER OF THE SYSTEM IN A VISIBLE POSITION NEAR THE BLM ROTARY LOBE VACUUM/PRESSURE PUMP

MANDATORY
PERSONAL
PROTECTIVE
EQUIPMENT



INDICATION OF DIRECTION OF HANDLE ROTATION TO SELECT THE SUCTION OR COMPRESSION PHASES.

**PLACE THE SAFETY SIGNS IN A VISIBLE POSITION NEAR THE PUMP**

## CONDITIONS AND LIMITS OF USE - LIST OF HAZARDS

***The installation must be compliant, for member states of the EEC, with directive 2006/42/EC and subsequent amendments, while for other states it must be compliant with local health and safety Legislation.***
This rotary lobe vacuum/pressure pump has been designed to create a vacuum or pressure inside a tank to which it is connected.

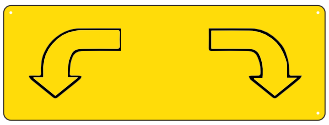
***No liquids, powders, or solids of any kind must enter the rotary lobe vacuum/pressure pump, as these may cause it to break. It is therefore necessary to equip the system with overflow safety valves.***
***Any other use of the rotary lobe vacuum/pressure pump different to that specified is to be considered strictly prohibited, not intended by the manufacturer and therefore highly dangerous.***
***Do not use the rotary lobe vacuum/pressure pump to transfer flammable and/or explosive liquids and materials and materials that release flammable gases.***
***Do not use the rotary lobe vacuum/pressure pump in potentially explosive atmospheres.***
***Never remove the protections arranged on the pump and check their efficiency each time the machine is used.***
***All operations must be carried out with the machine at a standstill and by qualified personnel.***
***Unqualified personnel is not authorised to work on or near the rotary lobe vacuum/pressure pump.***
***Battioni Pagani ® shall not be liable for any inconveniences, breakages and accidents due to non-application of the indications in the manual, non-compliance with current regulations and non-application of due diligence during manoevring, maintenance or repair operations, even if not expressly stated in this manual.***

**Failure to comply with the provisions contained in this manual shall give rise to the following dangers:**

- Crushing hazard due to the weight of the rotary lobe vacuum/pressure pump during handling and transport;
- In-running nip point hazard in transmission components in the event the necessary protections are removed (avoid clothing with wide sleeves, ties, bracelets, necklaces, etc.);
- Thermal type hazards due to the high temperatures reached by the rotary lobe vacuum/pressure pump;
- Noise hazard due to the noise produced and failure to wear personal protective equipment;
- Shearing hazard for the operator during testing, with the rotary lobe vacuum/pressure pump suction and delivery tubes disconnected
- Flying solid or liquid debris hazard following the serious breakage of the rotary lobe vacuum/pressure pump;

# KOHUSTUSLIKUD OHUTUSMÄRGID, MIS TOOTJA PEAB KINNITAMA SEADMELE NÄHTAVASSE KOHTA NING VAAKUM-SURVEPUMBA BLM LÄHEDUSSE

ISIKUKAIT SEVAHENDID, MILLE KASUTAMINE ON KOHUSTUSLIK



NOOLED MÄRGIVAD KÄEPIDEME PÖÖRAMISSUUNDA IMI- VÕI SURVEFAASI VALIKUKS.

**OHUTUSMÄRGID TULEB KINNITADA NÄHTAVASSE KOHTA JA PUMBA LÄHEDUSSE**

## KASUTAMISTINGIMUSED JA PIIRANGUD – OHTUDE LOETELU

***Paigaldamine peab ühisturu riikides vastama direktiivile 2006/42/EÜ ja selle muudatustele ning teistes riikides kohalikele ohutusalastele õigusnormidele.***
See vaakum-survepump on mõeldud vaakumi või surve tekitamiseks anumas, millega pump on ühendatud.

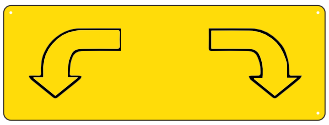
***Vaakum-survepumba sisemusse ei tohi mitte mingil juhul sattuda vedelikku, tolmu ega mistahes tahkeid aineid, kuna need võivad pumpa kahjustada. Seega tuleb seade varustada ohutusventiilidega.***
***Vaakum-survepumba nõuetele mittevastav kasutamine on rangelt keelatud, valmistaja pole seda ette näinud ning seetõttu on see väga ohtlik.***
***Ärge kasutage vaakum-survepumpa plahvatus- ja tuleohtlike vedelike ja materjalide ning süttimisohtlikku gaasi eraldavate materjalide käitlemisel.***
***Ärge kasutage vaakum-survepumpa plahvatusohtlikus keskkonnas.***
***Ärge eemaldage pumbalt ette nähtud kaitseseadiseid ning kontrollige alati enne tööle asumist nende korrasolekut.***
***Mis tahes sekkumise korral tuleb masin peatada ja töö peab tegema pädev tehnik.***
***Väljaõppeta töötaja pumbaga või selle läheduses töötada ei tohi.***
***Battioni Pagani ® ei vastuta tõrgete, purunemiste ja õnnetuste korral, mis tulenevad juhendis sisalduvate näpunäidete kohaldamata jätmisest, kehtivate reeglite mittejärgimisest ning hooletusest manööverdamisel, hooldus- või remonditoimingute tegemisel, isegi kui eespool nimetatuid pole käesolevas juhendis sõnaselgelt kirjeldatud.***

Selle kasutusjuhendi ettekirjutuste täitmata jätmine võib kaasa tuua järgmised ohud.

- Vaakum-survepumba massist tingitud muljumisoht pumba teisaldamisel ja transpordil
- Oht jääda ülekandesüsteemi osade külge kinni, kui pumbalt on eemaldatud kaitsekatted (mitte kanda laiade varrukatega riideid, lipse, käevõrusid, kaelakette jne).
- Vaakum-survepumba töötamisel tekkida võivast temperatuurist tingitud termiline risk
- Kuulmiselundite kahjustamise oht, mis tuleneb pumba tekitatavast mürast juhul, kui ei kasutata isikukaitsevahendeid
- Lõikehaavade oht töötajale seadme katsetamisfaasis, kui pumba imi- ja survetorud on lahti ühendatud
- Tahkete ja vedelate osakeste laialipaiskumise oht vaakum-survepumba raske rikke korral

# PAKOLLISET TURVALLISUUSKYLTIT, JOTKA LAITTEISTON VALMISTAJAN TULEE ASETTAA NÄKYVÄLLE PAIKALLE TYHJIÖPUMPUN/KIERTOMÄNTÄPUMPUN BLM LÄHELLE

PAKOLLISET HENKILÖS-UOJAIMET



KAHVAN KIERTOSUUNNAN ILMOITUS IMUN TAI PURISTUKSEN VAIHEIDEN VALITSEMISEKSI.

**ASETA TURVALLISUUSKYLTIT NÄKYVILLE JA PUMPUN LÄHELLE**

# KÄYTTÖOLOSUHTEET JA -RAJOITUKSET – VAARALUETTELO

***Asennuksen tulee vastata direktiivi 2006/42/EY ja sen myöhempiä muutoksia Euroopan yhteisön maissa. Muissa maissa sen tulee vastata paikallisia turvallisuutta koskevia määräyksiä.***
Tämä tyhjiöpumppu/kiertomäntäpumppu on suunniteltu saamaan aikaan tyhjiö tai paine sen säiliön sisällä, johon se on liitetty.

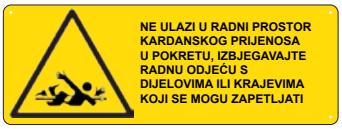
***Tyhjiöpumpun/kiertomäntäpumpun sisälle ei saa päästä missään tapauksessa nesteitä, pölyä tai mitään kiinteää materiaalia, sillä muuten pumppu voi rikkoontua. Siksi laitteisto tulee varustaa ylipaineen varoventtiileillä.***
***Tyhjiöpumpun/kiertomäntäpumpun kaikenlainen muu käyttö, joka poikkeaa osoitetusta, on ehdottomasti kielletty, ei kuulu valmistajan antamaan käyttötarkoitukseen ja on näin ollen erittäin vaarallista.***
***Älä käytä tyhjiöpumppua/kiertomäntäpumppua siirtääksesi syttyviä ja/tai räjähdysalttiita nesteitä ja materiaaleja tai materiaaleja, joista tulee syttyviä kaasuja.***
***Älä käytä tyhjiöpumppua/kiertomäntäpumppua räjähdysalttiissa ilmastoissa.***
***Älä koskaan poista pumpun suojia ja tarkista näiden tehokkuus aina kun konetta käytetään.***
***Kaikki toimenpiteet tulee tehdä koneen ollessa pysähdyksissä, ja ne edellyttävät pätevää henkilökuntaa.***
***Epäpätevä henkilökunta ei saa käyttää tyhjiöpumppua/kiertomäntäpumppua eikä saa olla sen lähellä.***
***Battioni Pagani ® ei ole vastuussa häiriöistä, rikkoontumisista ja tapaturmista, jotka ovat seurausta tämän oppaan ohjeiden laiminlyönnistä, oikeaoppisten määräysten laiminlyönnistä sekä riittävän huolellisuuden puuttumisesta liikuttamisen, käytön, huollon tai korjauksen aikana, vaikka näistä ei mainittaisikaan erikseen tässä oppaassa.***

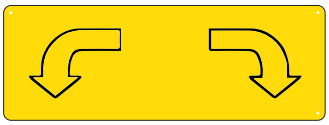
**Tässä oppaassa annettujen ohjeiden laiminlyöminen saattaa johtaa seuraaviin vaaroihin:**

- Puristumisvaara, joka johtuu tyhjiöpumpun/kiertomäntäpumpun painosta liikutus- ja kuljetusvaiheissa;
- Takertumisvaara voimansiirto-osiin, mikäli tarvittavat suojat on poistettu (vältä vaatteita, joissa on suuret hihat, kravattia, rannekoruja, kaulakoruja jne.);
- Kuumuuteen liittyvät vaarat, jotka johtuvat tyhjiöpumpun/kiertomäntäpumpun saavuttamista lämpötiloista;
- Meluvaara, joka johtuu syntyneestä melusta ja henkilösuojainten käytön laiminlyömisestä;
- Käyttäjän leikkaantumisvaara tarkistusvaiheessa imu- ja paineputkien ollessa irti tyhjiöpumpusta/kiertomäntäpumpusta
- Kiinteiden ja nestemäisten materiaalien sinkoutumisvaara tyhjiöpumpun/kiertomäntäpumpun vakavan rikkoontumisen seurauksena;

# OBAVEZNI SIGURNOSNI ZNAKOVI KOJE PROIZVOĐAČ POSTROJENJA MORA POSTAVITI NA VIDLJIVI POLOŽAJ I BLIZU VAKUUMSKE/TLAČNE VOLUMETRIJKE PUMPE BLM

OSOBNA ZAŠTITNA OPREMA ČIJA JE UPOTREBA OBAVEZNA





OZNAKA SMJERA VRTNJE RUČKE ZA ODABIR FAZA USISAVANJA ILI KOMPRESIJE.

**POSTAVITE SIGURNOSNE SIGNALE NA VIDLJIVO MJESTO I BLIZU PUMPE**

## UVJETI I OGRANIČENJA UPORABE - POPIS OPASNOSTI

***Instalacija, za zemlje Europskog tržišta, mora biti u skladu s Direktivom 2006/42/EZ i naknadnim izmjenama, dok za ostale zemlje mora biti u skladu s lokalnim propisima o sigurnosti.***
Ova volumetrijska vakuumska/tlačna pumpa dizajnirana je s funkcijom stvaranja vakuuma ili tlaka unutar spremnika s kojim je spojena.

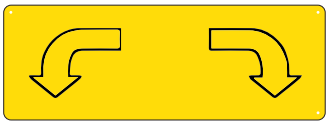
***Unutar volumetrijske vakuumsko/tlačne pumpe ni pod kojim uvjetima ne smiju ući tekućine, prašci ili kruti materijali bilo koje vrste, jer bi mogli prouzročiti lom. Stoga je potrebno sustav opremiti sigurnosnim ventilima za preljev.***
***Svaka druga upotreba volumetrijske vakuumsko/tlačne pumpe osim navedene smatra se strogo zabranjenom, ne predviđenom od strane proizvođača i stoga visoke opasnosti.***
***Ne koristite volumetrijsko vakuumsko/tlačnu pumpu za pomicanje zapaljivih i/ili eksplozivnih tekućina i materijala te za materijale koji ispuštaju zapaljive plinove.***
***Ne koristite volumetrijsko vakuumsko/tlačnu pumpu u potencijalno eksplozivnoj atmosferi.***
***Nikada ne uklanjajte zaštite postavljene na pumpi i provjeravajte njezinu učinkovitost svaki put kada se stroj koristi.***
***Svaka intervencija mora biti izvedena kad je stroj zaustavljen i od strane kvalificiranog osoblja.***
***Nekvalificirano osoblje nije ovlašteno za rad na volumetrijskoj vakuumsko/tlačnoj pumpi ili u njezinoj blizini.***
***Tvrtka Battioni Pagani ® neće biti odgovorna za neugodnosti, lomove i nesreće zbog nepridržavanja uputa sadržanih u priručniku, za nepoštivanja trenutnih pravila i za neprimjenjivanje potrebne pažnje tijekom upotrebe, održavanja ili popravljanja, čak i ako nisu izričito navedeno u ovom priručniku.***

Ukoliko ne slijedite upute iz ovog priručnika mogu vam se dogoditi slijedeće opasnosti:

- Opasnost od lomljenja koju izaziva težina volumetrijske vakuumsko/tlačne pumpe tijekom pomicanja i transporta;
- Opasnost od zapetljanja odjeće u dijelovima prijenosnika ako se uklone odgovarajuće štitnike (izbjegavajte odjeću sa širokim rukavima, kravate, narukvice, ogrlice itd.);
- Opasnosti termičke prirode zbog temperature koju može dostići volumetrijska vakuumsko/tlačna pumpa;
- Akustična opasnost zbog zvuka i nekorištenja osobnih načina zaštite;
- Opasnost od rezanja za operatera tijekom ispitivanja s ne priključenim cijevima za usisavanje i dovod volumetrijske vakuumsko/tlačna pumpe
- Opasnost od projiciranja čvrstih i tekućih materijala nakon ozbiljnog kvara volumetrijske vakuumsko/tlačna pumpe;

# KÖTELEZŐ BIZTONSÁGI JELZÉSEK, AMELYEKET A BERENDEZÉS GYÁRTÓJÁNAK EL KELL HELYEZNIE LÁTHATÓ HELYEN, A BLM FORGÓLAPÁTOS/NYOMÓVENTILÁTOROS VÁKUUMSZIVATTYÚ KÖZELÉBEN

EGYÉNI VÉDŐESZKÖZÖK, AMELYEK HASZNÁLATA KÖTELEZŐ



A SZÍVÁS ÉS KOMPRESSZIÓ SZAKASZOK KIVÁLASZTÓ KARJÁNAK FORGÁSI IRÁNYÁNAK JELZÉSE.

**HELYEZZE A BIZTONSÁGI JELZÉSEKET LÁTHATÓ HELYRE, ÉS A SZIVATTYÚ KÖZELÉBE**

# HASZNÁLATRA VONATKOZÓ FELTÉTELEK ÉS KORLÁTOZÁSOK - VESZÉLYEK FELSOROLÁSA

***Az üzembe helyezés, a Közös Piac országainak esetében, meg kell hogy feleljen a 2006/42/EK irányelvnek és későbbi módosításainak, míg a többi ország esetében meg kell felelnie a biztonsággal kapcsolatos helyi jogszabályoknak.***
Ezt a forgólapátos/nyomóventilátoros vákuumszivattyút úgy tervezték, hogy vákuumot vagy nyomást hozzon létre a hozzá kapcsolt tartály belsejében.

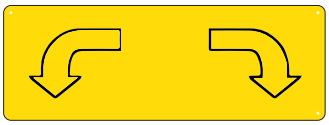
***A forgólapátos/nyomóventilátoros vákuumszivattyú belsejébe semmilyen esetben se kerüljön folyadék, porok vagy bármiféle szilárd anyag, mert az annak meghibásodásához vezet. Ezért a rendszert túlfolyó biztonsági szelepekkel kell felszerelni.***
***A forgólapátos/nyomóventilátoros vákuumszivattyú a feltüntetettől eltérő használata szigorúan tilos, a gyártó által nem engedélyezett, tehát rendkívül veszélyes.***
***Ne használja a forgólapátos/nyomóventilátoros vákuumszivattyút gyúlékony és/vagy robbanékony folyadékok és anyagok, illetve olyan anyagok mozgatására, amelyek gyúlékony gázt bocsájtanak ki.***
***Ne használja a forgólapátos/nyomóventilátoros vákuumszivattyút potenciálisan robbanékony légkörben.***
***Soha ne távolítsa el a szivattyún lévő védelmeket, és a gép minden használatakor ellenőrizze azok hatékonyságát.***
***Minden beavatkozást álló gépen, szakképzett személyzet kell hogy elvégezze.***
***Nem szakképzett személyzet nem jogosult a forgólapátos/nyomóventilátoros vákuumszivattyú használatára illetve annak közelében tartózkodni.***
***A Battioni Pagani ® nem vállal felelősséget a kézikönyvben feltüntetett utasítások, a jelenlegi előírások be nem tartásából és a kezelés, a karbantartási vagy javítási műveletek folyamán alkalmazandó megfelelő gondosság elmulasztásából származó nehézségekért, meghibásodásokért és balesetekért, abban az esetben is, ha ezek nincsenek egyértelműen feltüntetve a jelen kézikönyvben.***

**A jelen kézikönyvben összefoglalt előírások betartásának hiánya komoly veszélyekkel járhat:**

- A forgólapátos/nyomóventilátoros vákuumszivattyú súlya által okozott összenyomás veszélye a mozgatás és szállítás során;
- Becsípődés veszélye a hajtómű szerveibe a megfelelő védelmek eltávolítása esetén (kerülje a hosszú ujjú ruhák, nyakkendők, karkötők, nyakláncok stb. viseletét);
- A magas hőmérséklettel kapcsolatos veszélyek, a forgólapátos/nyomóventilátoros vákuumszivattyúk által elérhető hőmérsékletek következtében;
- Akusztikai veszély a keletkező zaj és az egyéni védőeszközök használatának elmaradása miatt;
- A kezelő számára, a bevizsgálás során, a forgólapátos/nyomóventilátoros vákuumszivattyúról leváló szívócsövek és szállítócsövek okozta nyírási veszély
- Szilárd és folyékony anyagok kilövődésének veszélye a forgólapátos/nyomóventilátoros vákuumszivattyú súlyos meghibásodása esetén;

# PRIVALOMI SAUGOS ŽENKLAI, KURIUOS ĮRANGOS GAMINTOJAS TURI UŽDĖTI MATOMOJE PADĖTYJE IR ŠALIA VAKUUMINIO / SLĖGINIO MENTINIO SIURBLIO BLM

ASMENINĖS APSAUGOS PRIEMONĖS, KURIAS PRIVALOMA NAUDOTI



NURODOMA RANKENOS SUKIMO KRYPTIS RENKANTIS ORO IŠTRAUKIMĄ ARBA KOMPRESIJĄ.

**PATALPINKITE SAUGOS ŽENKLUS MATOMOJE VIETOJE IR ŠALIA SIURBLIO**

## NAUDOJIMO SĄLYGOS IR APRIBOJIMAI - PAVOJŲ SĄRAŠAS

***Europos ekonominėje erdvėje reikia montuoti pagal direktyvą 2006/42/EB ir vėlesnius pakeitimus, o tuo tarpu, kitose šalyse montuoti privaloma pagal vietinius saugos reglamentus.***
Šis vakuuminis / slėginis mentinis siurblys buvo suprojektuotas siekiant sudaryti vakuumą arba slėgį prie jo prijungto bako viduje.

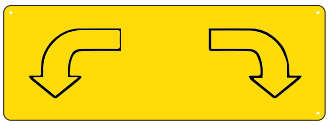
***Į vakuuminio / slėginio mentinio siurblio vidų jokiu būdu negali patekti skysčiai, dulkės arba bet kokios rūšies kietosios dalelės, nes jos gali sukelti gedimus. Todėl apsauginių vožtuvų įrangoje reikia įrengti apsauginius perpildymo vožtuvus.***
***Bet koks vakuuminio / slėginio mentinio siurblio naudojimas kitaip, nei nurodyta, yra laikomas griežtai draudžiamu, nenumatytu gamintojo ir todėl labai pavojingu.***
***Nenaudokite vakuuminio / slėginio mentinio siurblio skysčiams ir degioms ir (arba) sprogioms medžiagoms bei degias dujas išskiriančioms medžiagoms tiekti.***
***Nenaudokite vakuuminio / slėginio mentinio siurblio potencialiai sprogioje atmosferoje.***
***Niekada nenuimkite ant siurblio įrengtų apsauginių prietaisų ir patikrinkite jų efektyvumą kiekvieną kartą naudodami mašiną.***
***Bet kokius veiksmus privalo atlikti kvalifikuotas personalas tuomet, kai mašina sustabdyta.***
***Nekvalifikuotam personalui neleidžiama dirbti su vakuuminiu / slėginiu mentiniu siurbliu arba šalia jo.***
***„Battioni Pagani ®“ nebus atsakinga už sutrikimus, gedimus ir nelaimingus atsitikimus, jei nebuvo laikomasi vadove pateiktų nurodymų, nebuvo vykdomi taikomų standartų reikalavimai ir nebuvo išlaikomas pakankamas atsargumas manevruojant, atliekant techninės priežiūros arba remonto operacijas, net jei jos nėra tiesiogiai nurodytos šiame vadove.***

**Šiame vadove aprašytų nurodymų nesilaikymas gali sukelti toliau nurodytus pavojus:**

- Suspaudimo pavojus dėl vakuuminio / slėginio mentinio siurblio svorio kilnojimo ar pervežimo metu;
- Įsivėlimo į transmisijos dalis pavojus nuėmus atitinkamus apsaugus (venkite drabužių ilgomis rankovėmis, kaklaraiščių, apyrankių, grandinėlių ir t. t.);
- Su šiluma susiję pavojai dėl iki tam tikros temperatūros įkaitusio vakuuminio/ slėginio mentinio siurblio;
- Akustinis pavojus dėl skleidžiamo triukšmo ir nenaudojant asmeninės apsaugos priemonių;
- Įpjovimo operatoriui pavojus techninės patikros metu, kai oro ištraukimo ir tiekimo vamzdžiai atjungti nuo vakuuminio / slėginio mentinio siurblio
- Kietų ir skystų medžiagų išsipylimo pavojus, galintis labai sugadinti vakuuminį / slėginį mentinį siurblį;

# OBLIGĀTĀS DROŠĪBAS ZĪMES, KURAS SISTĒMAS RAŽOTĀJAM JĀPIESTIPRINA REDZAMĀ VIETĀ UN ROTĀCIJAS LĀPSTIŅU VAKUUMA/SPIEDIENA SŪKŅA BLM TUVUMĀ

INDIVIDUĀLIE AIZSARDZĪBAS LĪDZEKĻI, KURU LIETOŠANA IR OBLIGĀTA



ROKTURA GRIEŠANĀS VIRZIENA NORĀDE, LAI IZVĒLĒTOS IESŪKŠANAS VAI SASPIEŠANAS FĀZES.

**NOVIETOJIET DROŠĪBAS ZĪMES REDZAMĀ VIETĀ UN SŪKŅA TUVUMĀ**

# LIETOŠANAS NOSACĪJUMI UN IEROBEŽOJUMI - RISKU SARAKSTS

***Iekārtām kopējā tirgus valstīs jāatbilst Direktīvai 2006/42/EK un sekojošiem grozījumiem, savukārt citās valstīs tām jāatbilst vietējiem drošības noteikumiem.***

Šis rotācijas lāpstiņu vakuuma/spiediena sūknis ir izstrādāts ar funkciju, lai radītu vakuumu vai spiedienu tvertnē, kurai sūknis pievienots.

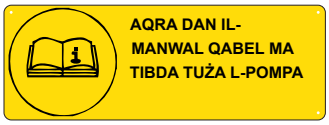
***Nekādā gadījumā šķidrumi, pulveri vai jebkāda veida cieti materiāli nedrīkst iekļūt rotācijas lāpstiņu vakuuma/spiediena sūknī, jo tie var izraisīt plīsumus. Tāpēc sistēma jāaprīko ar pārplūdes drošības vārstiem.***
***Jebkāda cita rotācijas lāpstiņu vakuuma/spiediena sūkņa izmantošana, izņemot norādīto, ir uzskatāma par stingri aizliegtu, ražotājs to neparedz un tāpēc var radīt lielu bīstamību.***
***Nelietojiet rotācijas lāpstiņu vakuuma/spiediena sūkni, lai pārvietotu uzliesmojošus un/vai sprādzienbīstamus šķidrumus un materiālus, kā arī materiālus, kas izdala uzliesmojošas gāzes.***
***Nelietojiet rotācijas lāpstiņu vakuuma/spiediena sūkni sprādzienbīstamā vidē.***
***Nekad nenoņemiet sūknim paredzētos aizsargus un pārbaudiet to efektivitāti ik reizi, kad iekārta tiek lietota.***
***Jebkura iejaukšanās jāveic kvalificētam personālam pie apstādinātas iekārtas.***
***Nekvalificētam personālam nav atļauts strādāt pie rotācijas lāpstiņu vakuuma/spiediena sūkņa vai tā tuvumā.***
***Uzņēmums Battioni Pagani ® nebūs atbildīgs par traucējumiem, bojājumiem un negadījumiem, kas saistīti ar instrukcijā ietverto norāžu nepiemērošanu, pašreizējo noteikumu neievērošanu un pienācīgas rūpības nepiemērošanu manevra, apkopes vai remonta darbību laikā, pat ja tas nav skaidri minēts šajā instrukcijā.***

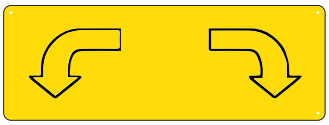
**Šajā rokasgrāmatā ietverto prasību neievērošana var izraisīt šādus riskus:**

- saspiešanas risks, ko izraisa rotācijas lāpstiņu vakuuma sūkņa svars pārvietošanas un transportēšanas laikā;
- apģērba aizķeršanas bīstamība transmisijas daļās, ja tiek noņemti atbilstošie aizsargi (izvairieties no apģērba ar platām piedurknēm, kaklasaitēm, aprocēm, kaklarotām, utt.);
- termiska rakstura riski saistībā ar temperatūru, kuru sasniedz rotācijas lāpstiņu vakuuma sūknis;
- akustiskais risks saistībā radīto troksni un individuālo aizsardzības līdzekļu nelietošanu;
- ievilkšanas risks operatoram testa laikā, ko var izraisīt iesūkšanas un padeves caurules, kas atvienotas no rotācijas lāpstiņu vakuuma/spiediena sūkņa;
- cietu un šķidru materiālu izlidošanas bīstamība pēc nopietna rotācijas lāpstiņu vakuuma/spiediena sūkņa bojājuma;

# TIKKETTA TAS-SIKUREZZA OBBLIGATORJA LI L-MANIFATTUR TAT-TAGĦMIR GĦANDU JWAĦĦAL F'POŻIZZJONI VIŻIBBLI U QRIB IL-POMPA TAL-VAKWU/PRESSJONI BIL-LOBI BLM

HUWA OBBLIGATORJU LI JINTUŻA TAGĦMIR PROTETTIV PERSONALI





INDIKAZZJONI TA' LIEMA NAĦA GĦANDHA TIDDAWWAR IL-MANILJA BIEX JINTGĦAŻLU L-FAŻIJIET TA' ASPIRAZZJONI JEW KOMPRESSJONI.

**WAĦĦAL IT-TIKKETTA TAS-SIKUREZZA F'POST VIŻIBBLI U QRIB IL-POMPA**

## KUNDIZZJONIJIET U LIMITI TAL-UŻU - LISTA TAL-PERIKLI

***L-installazzjoni għandha tkun konformi, għall-pajjiżi tas-Suq Komuni, mad-Direttiva 2006/42/KE u emendi suċċessivi, filwaqt li għall-Pajjiżi l-oħra għandha tkun konformi mal-leġiżlazzjoni lokali fil-qasam tas-sikurezza.***
Din il-pompa tal-vakwu/pressjoni bil-lobi ġiet imfassla bil-funzjoni li toħloq vakwu jew pressjoni fuq ġewwa ta' tank imqabbad magħha.

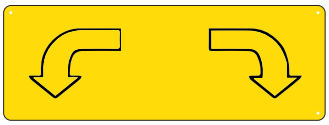
***Fuq ġewwa tal-pompa tal-vakwu/pressjoni bil-lobi, fl-ebda każ m'għandhom jidħlu likwidi, trabijiet jew materjali solidi ta' kwalunkwe tip għaliex dawn jistgħu jikkawżaw ħsara. Għaldaqstant jeħtieġ li t-tagħmir ikollu valvi tas-sikurezza għal mili żejjed.***
***Kull użu ieħor tal-pompa tal-vakwu/pressjoni bil-lobi, ħlief dak speċifikat, għandu jitqies assolutament ipprojbit, mhux stipulat mill-manifattur u għaldaqstant ta' riskju oġħla.***
***Tużax il-pompa tal-vakwu/pressjoni bil-lobi biex iċċaqlaq likwidi u materjali fjammabbli u/jew splussivi u għal materjali li jemettu gass fjammibbli.***
***Tużax il-pompa tal-vakwu/pressjoni bil-lobi f'atmosferi potenzjalment splussivi.***
***Qatt tneħħi l-protezzjonijiet speċifikati fuq il-pompa u ċċekkja l-effiċjenza tagħhom kull darba li tintuża l-magna.***
***Kull intervent għandu jitwettaq meta l-magna tkun wieqfa u minn persunal ikkwalifikat.***
***Persunal mhux ikkwalifikat mhuwiex awtorizzat li jaħdem fuq il-pompa tal-vakwu/pressjoni bil-lobi jew qrib tagħha.***
***Battioni Pagani ® ma tkunx responsabbli għal inkonvenjenzi, ksur u inċidenti minħabba n-nuqqas ta' applikazzjoni tal-istruzzjonijiet li jinsabu fil-manwal, għan-nuqqas ta' osservanza tar-regoli kurrenti u għan-nuqqas ta' applikazzjoni tad-diliġenza dovuta waqt l-immanuvrar, l-operazzjonijiet ta' manutenzjoni jew ta' tiswija, anke jekk mhux imsemmijin b'mod espress f'dan il-manwal.***

**Jekk l-ispeċifikazzjonijiet li jinsabu f'dan il-manwal ma jiġux segwiti, dan jista' jwassal għall-perikli li ġejjin:**

- Periklu ta' għaffiġ ikkawżat mill-massa tal-pompa tal-vakwu/bil-pressjoni bil-lobi waqt iċ-ċaqliq u t-trasport;
- Periklu ta' qbid fl-elementi tat-trażmissjoni fil-każ li jitneħħew il-protezzjonijiet xierqa (evita ħwejjeġ bi kmiem wesgħin, ingravati, brazzuletti, ġiżirani, eċċ.);
- Perikli ta' sħana minħabba t-temperaturi li tista' tilħaq il-pompa tal-vakwu/pressjoni bil-lobi;
- Periklu akustiku minħabba l-ħoss prodott u n-nuqqas ta' użu tat-tagħmir personali ta' protezzjoni;
- Periklu ta' feriti għall-operatur fil-fażi tal-ittestjar bit-tubi ta' aspirazzjoni u ta' alimentazzjoni li jinqalgħu mill-pompa tal-vakwu/pressjoni bil-lobi;
- Periklu ta' pprojettar ta' materjali solidi u likwidi wara ħsara serja tal-pompi tal-vakwu/pressjoni bil-lobi;

# VERPLICHTE VEILIGHEIDSSIGNALERINGEN DIE DOOR DE FABRIKANT VAN HET SYSTEEM OP EEN ZICHTBARE PLAATS EN IN DE NABIJHEID VAN DE VACUÜM-/DRUKLOBBENPOMP BLM MOETEN WORDEN AANGEBRACHT

PERSOONLIJKE BESCHERMINGSMIDDELEN DIE VERPLICHT GEBRUIKT MOETEN WORDEN



AANDUIDING VAN DE DRAAIRICHTING VAN DE HANDGREEP VOOR DE SELECTIE VAN DE FASEN VAN AANZUIGING OF COMPRESSIE.

**BRENG DE VEILIGHEIDSSIGNALERINGEN AAN OP EEN ZICHTBARE PLEK, IN DE NABIJHEID VAN DE POMP**

## GEBRUIKSOMSTANDIGHEDEN EN -BEPERKINGEN - LIJST VAN DE GEVAREN

***De installatie moet, voor de landen van de Gemeenschappelijke Markt, voldoen aan de richtlijn 2006/42/EG en latere wijzigingen. Voor andere landen moet de installatie voldoen aan de plaatselijk geldende regelgeving inzake de veiligheid.***
Deze vacuüm-/druklobbenpomp is ontworpen voor het creëren van een vacuüm of een druk binnen een met de pomp verbonden tank.

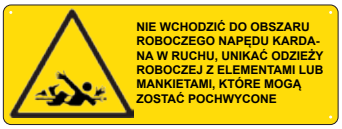
***In de vacuüm-/druklobbenpomp mogen onder geen beding vloeistoffen, stofdeeltjes of vaste materialen van enige aard binnendringen die de pomp mogelijk kunnen beschadigen. De installatie moet derhalve worden uitgerust met overloopventielen.***
***Elk gebruik van de vacuüm-/druklobbenpomp dat afwijkt van het aangegeven gebruik moet als strikt verboden, niet-voorzien door de fabrikant en dus zeer gevaarlijk worden beschouwd.***
***Gebruik de vacuüm-/lobbenpomp niet voor de behandeling van ontvlambare en/of explosieve vloeistoffen en materialen of voor materialen die ontvlambaar gas vrijgeven.***
***Gebruik de vacuüm-/lobbenpomp niet omgevingen met een potentieel gevaarlijke atmosfeer.***
***Verwijder nooit de op de pomp voorziene afschermingen en controleer bij elk gebruik van de machine de efficiëntie van deze afschermingen.***
***Alle eventuele ingrepen moeten gebeuren op de stilstaande machine en door gekwalificeerd personeel.***
***Ongekwalificeerd personeel is niet bevoegd om op of in de nabijheid van de vacuüm-/lobbenpomp te werken.***
***Battioni Pagani ® is niet aansprakelijk voor problemen, breuk en ongevallen te wijten aan de niet-naleving van de aanwijzingen van deze handleiding, de veronachtzaming van de geldende normen en het niet gebruik van de noodzakelijke zorgvuldigheid tijdens de manoeuvres, de werkzaamheden voor onderhoud en reparatie, ook als dit niet nadrukkelijk wordt aangegeven in deze handleiding.***

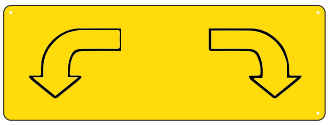
**De niet-naleving van de voorschriften van deze handleiding kan leiden tot de volgende gevaren:**

- Verpletteringsgevaar, veroorzaakt door de massa van de vacuüm-/druklobbenpomp tijdens de verplaatsing en het vervoer;
- Gevaar voor verstrikt raken in de aandrijvingsorganen in geval de voorziene afschermingen worden verwijderd (vermijd kleding met wijde mouwen, stropdassen, armbanden, kettingen, enz.);
- Gevaren van thermische aard als gevolg van de temperaturen die de vacuüm-/druklobbenpomp kan bereiken;
- Gevaar voor gehoorbeschadiging als gevolg van het geproduceerde lawaai en het niet-gebruik van persoonlijke beschermingsmiddelen;
- Snijgevaar voor de operator tijdens de keuring bij van de vacuüm-/druklobbenpomp losgekoppelde inlaat- en uitlaatleidingen;
- Gevaar voor wegschietend vaste en vloeibare materialen als gevolg van een ernstige breuk van de vacuüm-/druklobbenpomp;

# OBOWIĄZKOWE OZNAKOWANIE BEZPIECZEŃSTWA, KTÓRE PRODUCENT INSTALACJI ZOBOWIĄZANY JEST UMIEŚCIĆ W WIDOCZNYM MIEJSCU I W POBLIŻU POMPY PRÓŻNIOWEJ/ TŁOCZĄCEJ KRZYWKOWEJ BLM

ŚRODKI OCHRONY INDYWI-DUALNEJ, KTÓRYCH STOSOWANIE JEST OBO-WIĄZKOWE





WSKAZANE KIERUNKU OBROTU UCHWYTU DO WYBRANIA ETAPU ZASYSANIA LUB SPRĘŻANIA.

UMIEŚCIĆ OZNAKOWANIE BEZPIECZEŃSTWA W WIDOCZNYM MIEJSCU W POBLIŻU POMPY

## ZASADY I OGRANICZENIA UŻYTKOWANIA - SPIS ZAGROŻEŃ

***W odniesieniu do krajów Rynku Wspólnoty instalacja powinna spełniać wytyczne określone dyrektywą 2006/42/WE wraz z jej późniejszymi zmianami, natomiast w odniesieniu do pozostałych krajów, powinna spełniać lokalne przepisy dotyczące bezpieczeństwa.***
Pompa próżniowa/tłocząca krzywkowa została zaprojektowana do generowania próżni i ciśnienia wewnątrz podłączonego do niej zbiornika.

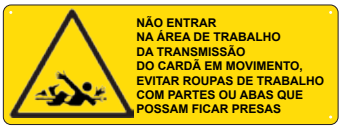
***Przedostanie się do wnętrza pompy próżniowej/tłoczącej krzywkowej wszelkiego rodzaju cieczy, pyłów lub materiałów stałych może doprowadzić do jej pęknięcia. W związku z powyższym, instalację należy wyposażyć w zawory przelewowe.***
***Każde inne użycie pompy próżniowej/tłoczącej krzywkowej niż to określone, należy uważać za surowo zabronione, nieprzewidziane przez producenta, a zatem bardzo niebezpieczne.***
***Nie stosować pompy próżniowej/tłoczącej krzywkowej do przemieszczania płynów i materiałów łatwopalnych i/lub wybuchowych oraz materiałów generujących gaz łatwopalny.***
***Nie używać pompy próżniowej/tłoczącej krzywkowej w strefach zagrożonych wybuchem.***
***Nigdy nie zdejmować zabezpieczeń pompy i sprawdzać jej wydajność przed każdym użyciem maszyny.***
***Wszelkie interwencje powinny być wykonywane na zatrzymanej maszynie i przez wykwalifikowany personel.***
***Niewykwalifikowany personel nie jest upoważniony do pracy na lub w pobliżu pompy próżniowej/tłoczącej krzywkowej.***
***Firma Battioni Pagani ® nie ponosi odpowiedzialności za niedogodności, uszkodzenia i wypadki wynikające z niestosowania się do wskazówek zawartych w instrukcji, nieprzestrzegania aktualnych przepisów oraz niezachowania należytej staranności podczas manewrów, konserwacji lub napraw, nawet jeśli nie zostały one wyraźnie wymienione w niniejszej instrukcji.***

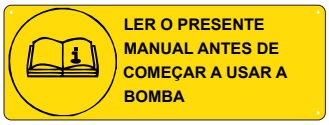
**Nieprzestrzeganie zaleceń zawartych w niniejszej instrukcji może doprowadzić do następującego zagrożenia:**

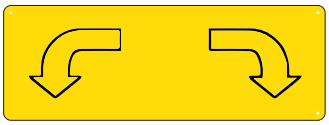
- Niebezpieczeństwo przygniecenia spowodowanego ciężarem pompy próżniowej/tłoczącej krzywkowej podczas przemieszczania i transportu;
- Niebezpieczeństwo wplątania odzieży w elementy napędu, w przypadku zdjęcia odnośnych zabezpieczeń (unikać odzieży z szerokimi rękawami, krawatów, bransoletek, naszyjników itp.);
- Niebezpieczeństwa związane z wysoką temperaturą osiąganą przez pompę próżniową/tłoczącą krzywkową;
- Niebezpieczeństwo związane z hałasem emitowanym przez produkt w przypadku niezastosowania odpowiednich środków ochrony indywidualnej;
- Niebezpieczeństwo przecięcia dla operatora podczas przeglądu z odłączonymi przewodami ssawnymi i tłocznymi pompy próżniowej/tłoczącej krzywkowej
- Niebezpieczeństwo odprysku materiałów stałych i ciekłych w wyniku poważnego pęknięcia pompy próżniowej/tłoczącej krzywkowej;

# SINALIZAÇÃO DE SEGURANÇA OBRIGATÓRIA QUE O FABRICANTE DO EQUIPAMENTO DEVE AFIXAR EM POSIÇÃO VISÍVEL E NAS PROXIMIDADES DA BOMBA DE VÁCUO/PRESSÃO DE LÓBULOS BLM

EQUIPAMENTOS DE PROTEÇÃO INDIVIDUAL DE USO OBRIGATÓRIO





INDICAÇÃO DA DIREÇÃO DE ROTAÇÃO DO MANÍPULO PARA SELECIONAR AS FASES DE ASPIRAÇÃO OU COMPRESSÃO.

**COLOCAR AS SINALIZAÇÕES DE SEGURANÇA EM POSIÇÃO VISÍVEL E NAS PROXIMIDADES DA BOMBA**

# CONDIÇÕES E LIMITES DO USO - LISTA DOS PERIGOS

***Nos países do Mercado Comum Europeu, a instalação deve estar em conformidade com a diretiva 2006/42/CE e sucessivas modificações; quanto aos demais países, deve respeitar as normas locais em matéria de segurança.***
A bomba de vácuo/pressão de lóbulos aqui abordada foi projetada com a função de criar vácuo ou pressão no interior de um tanque a ela acoplado.

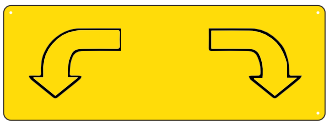
***No interior da bomba de vácuo/pressão de lóbulos, não devem entrar, em nenhum caso, líquidos, pós ou materiais sólidos de qualquer espécie, pois podem provocar sua quebra. É necessário, portanto, dotar o sistema de válvulas de segurança de descarga.***
***Qualquer outro uso da bomba de vácuo/pressão de lóbulos que não seja especificado deve ser considerado absolutamente proibido, não previsto pelo fabricante e, portanto, de alta periculosidade.***
***Não utilize a bomba de vácuo/pressão de lóbulos para o movimento de líquidos, materiais inflamáveis e/ou explosivos ou materiais que emitem gases inflamáveis.***
***Não utilize a bomba de vácuo/pressão de lóbulos em atmosferas potencialmente explosivas.***
***Nunca retire as proteções instaladas na bomba e verifique sua eficiência sempre que a máquina for utilizada.***
***Qualquer intervenção deve ser realizada com a máquina parada e por profissionais qualificados.***
***Profissionais não qualificados não estão autorizados a trabalhar na bomba de vácuo/pressão de lóbulos ou nas suas proximidades.***
***A Battioni Pagani ® não se responsabilizará por inconvenientes, quebras e acidentes devido à não aplicação das indicações contidas no manual, à inobservância das normas em vigor e à não aplicação da devida diligência durante a manobra e as operações de manutenção ou de reparo, mesmo se não expressamente mencionadas neste manual.***

**A inobservância das prescrições contidas neste manual pode comportar os seguintes perigos:**

- Perigo de esmagamento provocado pela massa da bomba de vácuo/pressão de lóbulos durante a movimentação e o transporte;
- Perigo de apresamento nos elementos de transmissão em caso de remoção das proteções adequadas (evite roupas com mangas largas, gravatas, pulseiras, correntes etc.);
- Perigos de natureza térmica devido às temperaturas que podem ser atingidas pela bomba de vácuo/pressão de lóbulos;
- Perigo acústico devido ao ruído produzido e à não utilização dos equipamentos de proteção individual;
- Perigo de cortes para o operador na fase de inspeção com tubos de aspiração e saída desconectados da bomba de vácuo/pressão de lóbulos;
- Perigo de projeção de materiais sólidos e líquidos após uma grave quebra da bomba de vácuo/pressão de lóbulos.

# SEMNE DE SIGURANȚĂ OBLIGATORIE PE CARE PRODUCĂTORUL INSTALAȚIEI TREBUIE SĂ LE AȘEZE ÎN POZIȚIE VIZIBILĂ ȘI ÎN APROPIEREA POMPEI DE VID/PRESIUNE CU LOBI BLM

ECHIPAMENTE INDIVIDUALE DE PROTECȚIE A CĂROR UTILIZARE ESTE OBLIGATORIE



INDICAREA DIRECȚIEI DE ROTAȚIE A MÂNERULUI PENTRU A SELECTA FAZELE DE ASPIRARE SAU COMPRESIE.

**AȘEZAȚI SEMNELE DE SIGURANȚĂ ÎNTR-O POZIȚIE VIZIBILĂ ȘI ÎN APROPIEREA POMPEI**

## CONDIȚII ȘI LIMITE DE UTILIZARE - LISTA PERICOLELOR

***Instalarea trebuie să respecte, pentru țările Pieței Comune, Directiva 2006/42/CE cu modificările ulterioare, în timp ce pentru alte țări trebuie să respecte reglementările locale în materie de siguranță.***
Această pompă de vid/presiune cu lobi este concepută cu funcția de a crea un vid sau o presiune în interiorul unui rezervor conectat la acesta.

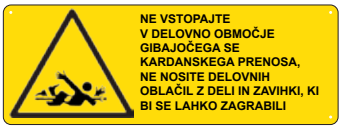
***În niciun caz, lichidele, pulberile sau materialele solide de orice fel nu trebuie să intre în pompa de vid cu lobi/presiune, deoarece acestea ar putea cauza ruperea. Prin urmare, este necesar să dotați sistemul cu supape de siguranță de revărsare.***
***Orice altă utilizare a pompei de vid/presiune cu lobi, cu excepția celei specificate, trebuie considerată strict interzisă, neprevăzută de producător și, prin urmare, cu un grad mare de pericol.***
***Nu folosiți pompa de vid/presiune cu lobi pentru a deplasa lichide și materiale inflamabile și/sau explozive și pentru materialele care eliberează gaze inflamabile.***
***Nu folosiți pompa de vid/presiune cu lobi într-o atmosferă potențial explozivă.***
***Nu îndepărtați niciodată protecțiile de pe pompă și verificați eficiența acesteia de fiecare dată când mașina este utilizată.***
***Orice intervenție trebuie efectuată cu mașina oprită și de către personal calificat.***
***Personalul necalificat nu este autorizat să lucreze la sau lângă pompa de vid/presiune cu lobi.***
***Battioni Pagani ® nu va fi responsabilă pentru inconveniente, rupturi și accidente cauzate de lipsa punerii în aplicare a indicațiilor cuprinse în manual, nerespectarea reglementărilor în vigoare și neaplicarea diligenței cuvenite în timpul operațiunilor de manevră, întreținere sau reparații, chiar dacă acestea nu sunt menționate în mod special în acest manual.***

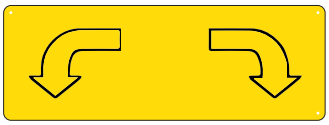
**Nerespectarea instrucțiunilor conținute în acest manual poate implica următoarele pericole:**

- Pericol de strivire cauzat de masa pompei de vid/presiune cu lobi în timpul manipulării și transportului;
- Pericol de prindere în piesele de transmisie dacă sunt îndepărtate protecțiile corespunzătoare (evitați îmbrăcămintea cu mâneci largi, cravate, brățări, coliere etc.);
- Pericole de natură termică datorate temperaturilor atinse de către pompa de vid/presiune cu lobi;
- Pericol acustic provocat de zgomotul produs și de nefolosirea echipamentului individual de protecție;
- Pericol de tăiere pentru operator în timpul testării cu conducte de aspirație și de alimentare detașate de pompa de vid/presiune cu lobi
- Pericol de proiecție a materialelor solide și lichide în urma unei ruperi grave a pompei de vid/presiune cu lobi;

# OBVEZNI VARNOSTNI ZNAKI, KI JIH PROIZVAJALEC NAPRAVE MORA NAMESTITI NA VIDNEM MESTU IN V BLIŽINI PODTLAČNE/TLAČNE VOLUMETRIČNE ČRPALKE BLM

OSEBNA VAROVALNA OPREMA, KATERE UPORABA JE OBVEZNA





OZNAKA SMERI ZASUKA ROČAJA ZA IZBIRO FAZE SESANJA ALI KOMPRESIJE.

**VARNOSTNE ZNAKE NAMESTITE NA VIDNO MESTO IN V BLIŽINI ČRPALKE**

# POGOJI IN OMEJITVE UPORABE - SEZNAM NEVARNOSTI

***Namestitev mora biti skladna, za države trga Skupnosti, z direktivo 2006/42/ES in nadaljnjimi spremembami, medtem ko v drugih državah mora biti skladna z lokalnimi predpisi s področja varnosti.***
Ta podtlačna/tlačna volumetrična črpalka je bila zasnovana s funkcijo za ustvarjanje podtlaka ali nadtlaka v rezervoarju, s katerim je povezana.

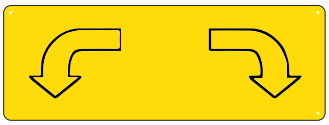
***V notranjost podtlačne/tlačne volumetrične črpalke v nobenem primeru ne smejo vstopiti tekočine, praha ali trdni delci katere koli vrste, ki bi lahko povzročili okvaro. zato je napravo potrebno opremiti s prelivnimi varnostnimi ventili.***
***Vsaka drugačna uporaba podtlačne/tlačne volumetrične črpalke, razen tiste,m ki je navedena, se smatra za strogo prepovedano, ki je proizvajalec ni predvidel, in zato zelo nevarno.***
***Podtlačne/tlačne volumetrične črpalke ne uporabljajte za gibanje tekočin in vnetljivih in/ali eksplozivnih materialov ter materialov, ki sproščajo vnetljive pline.***
***Podtlačne/tlačne volumetrične črpalke ne uporabljajte v potencialno eksplozivnih atmosferah.***
***Nikoli ne odstranite na črpalki nameščenih varoval ter preverite njihovo učinkovitost pred vsako uporabo naprave.***
***Vsak poseg se mora opraviti z ustavljenim strojem in z usposobljenim osebjem.***
***Osebje, ki ni usposobljeno, ni pooblaščeno za poseganje na podtlačni/tlačni volumetrični črpalki ali v njeni bližini.***
***Battioni Pagani ® ne bo odgovorna za težave, okvare in nesreče zaradi neuveljavitve napotkov, vsebovanih v tem priročniku, neupoštevanja veljavnih predpisov in opustitve potrebne skrbnosti med delovanjem, vzdrževanjem ali popravili, tudi če v tem priročniku niso izrecno navedene.***

**Neupoštevanje v tem priročniku predpisanih pravil lahko pomeni naslednje nevarnosti:**

- Nevarnost stisnjenja zaradi mase podtlačne/tlačne volumetrične črpalke med premikanjem in prevozom;
- Nevarnost zapletanja med gibajoče se dele prenosa v primeru odstranitve ustreznih varoval (izogibajte se oblačilom s širokimi rokavi, kravatam, zapestnicam, verižicam itd.);
- Nevarnosti toplotne narave zaradi temperatur, ki jih doseže podtlačna/tlačna volumetrična črpalka;
- Akustična nevarnost zaradi emisije hrupa in neuporabe osebne varovalne opreme;
- Nevarnost striženja za uporabnika med preskušanjem z odklopljenimi sesalnimi in odvodnimi cevmi podtlačne/tlačne volumetrične črpalke
- Nevarnost izmeta trdnih in tekočih materialov zaradi resnega loma podtlačne/tlačne volumetrične črpalke;

# POVINNÉ BEZPEČNOSTNÉ OZNAČENIE, KTORÉ VÝROBCA ZARIADENIA MUSÍ PRIPEVNIŤ VO VIDITEĽNEJ POLOHE A V BLÍZKOSTI VÁKUOVÉHO ČERPADLA/TLAKOVÉHO ZUBOVÉHO ČERPADLA BLM

OSOBNÉ OCHRANNÉ PROSTRIEDKY, KTORÝCH POUŽITIE JE POVINNÉ



OZNAČENIE SMERU OTÁČANIA RUKOVÄTE NA VÝBER FÁZ ODSÁVANIA ALEBO KOMPRESIE.

**UMIESTNITE BEZPEČNOSTNÉ NÁVESTIA DO VIDITEĽNEJ POLOHY A V BLÍZKOSTI ČERPADLA**

## PODMIENKY A LIMITY POUŽITIA - ZOZNAM NEBEZPEČENSTIEV

***Montáž musí byť v zhode, pre krajiny spoločného trhu, so smernicou 2006/42/ES v znení následných úprav, kým pre ďalšie krajiny musí byť v zhode s miestnymi normami v oblasti bezpečnosti.***
Toto vákuové čerpadlo/tlakové zubové čerpadlo bolo navrhnuté s cieľom vytvoriť vákuum alebo tlak vnútri nádrže, ku ktorej je pripojené.

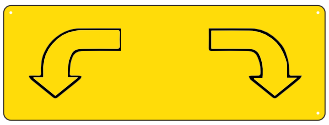
***Dovnútra vákuového čerpadla/tlakového zubového čerpadla sa v žiadnom prípade nesmú dostať kvapaliny, prach, ani pevné materiály akéhokoľvek druhu, pretože by mohli spôsobiť ich pretrhnutie. Preto je potrebné vybaviť zariadenie poistnými ventilmi proti preplneniu.***
***Akékoľvek iné použitie vákuového čerpadla/tlakového zubového čerpadla okrem špecifikovaného sa považuje za absolútne zakázané, nestanovené výrobcom a preto so zvýšenou nebezpečnosťou.***
***Vákuové čerpadlo/tlakové zubové čerpadlo nepoužívajte na presun kvapalín a horľavých a/alebo výbušných materiálov a materiálov, ktoré uvoľňujú horľavé plyny.***
***Vákuové čerpadlo/tlakové zubové čerpadlo nepoužívajte v potenciálne výbušných atmosférach.***
***Nikdy neodstraňujte ochrany pripevnené na čerpadle a pri každom použití stroja si overte ich účinnosť.***
***Akýkoľvek zásah sa smie vykonať iba so zastaveným strojom a musí ho vykonať kvalifikovaný personál.***
***Nekvalifikovaný personál nie je oprávnený pracovať na vákuovom čerpadle/tlakovom zubovom čerpadle ani v jeho blízkosti.***
***Spoločnosť Battioni Pagani ® nebude zodpovedná za poruchy, pretrhnutia a úrazy alebo nehody spôsobené neaplikáciou pokynov obsiahnutých v tomto návode, nedodržaním platných noriem a neopatrnosťou počas manipulácie, úkonu údržby alebo opravy, aj keď tieto nie sú výslovne uvedené v tomto návode.***

**Nedodržanie pokynov, ktoré sa nachádzajú v tomto návode, môže spôsobiť nasledujúce riziká:**

- Nebezpečenstvo pomliaždenia spôsobené hmotnosťou vákuového čerpadla/tlakového zubového čerpadla počas jeho pohybu a prepravy;
- Nebezpečenstvo zapletenia do prevodových ústrojov v prípade odstránenia vhodných ochrán (nenoste odev so širokými rukávmi, kravaty, náramky, náhrdelníky atď.);
- Nebezpečenstvá tepelnej povahy spôsobené teplotami, ktoré môže vákuové čerpadlo/tlakové zubové čerpadlo dosiahnuť;
- Akustické nebezpečenstvo spôsobené produkovaným hlukom a nepoužitím osobných ochranných pomôcok;
- Nebezpečenstvo porezania pre pracovníka obsluhy vo fáze prehliadky s odsávacími hadicami a prívodnými hadicami oddelenými od vákuového čerpadla/tlakového zubového čerpadla
- Nebezpečenstvo vymrštenia pevných a kvapalných materiálov následkom vážneho pretrhnutia vákuového čerpadla/tlakového zubového čerpadla;

# OBLIGATORISKA SÄKERHETSSKYLTAR SOM TILLVERKAREN AV ANLÄGGNINGEN SKA SÄTTA UT I SYNLIGT LÄGE OCH I NÄRHETEN AV PUMPEN FÖR VAKUUM LOBTRYCK BLM

PERSONLIG SKYDDSUT-RUSTNING VARS AN-VÄNDNING ÄR OBLIGATO-RISK



INDIKATION AV ROTATIONSRIKTNINGEN FÖR HANDTAGET FÖR ATT VÄLJA FASERNA SUGNING ELLER KOMPRESSION.

**PLACERA SÄKERHETSSKYLTARNA I SYNLIGT LÄGE OCH I NÄRHETEN AV PUMPEN**

# VILLKOR OCH GRÄNSER FÖR ANVÄNDNING - LISTA ÖVER FAROR

***Installationen ska för gemenskapens länder överensstämma med direktivet 2006/42/EG och följande ändringar, medan den för andra länder ska överensstämma med lokala säkerhetsbestämmelser.***
Denna pump för vakuum/lobtryck har konstruerats med funktionen att skapa ett vakuum eller ett tryck inuti tanken som den är ansluten till.

***Inuti pumpen för vakuum/lobtryck får inte i något fall vätskor, damm, eller fasta material av något slag tränga in, eftersom det skulle kunna leda till skada. Det är därför nödvändigt att tillämpa anläggningen med säkerhetsventiler med bräddavlopp.***
***All annan användning av pumpen för vakuum/lobtryck utöver den specificerade ska anses som absolut förbjuden, och inte avsedd av tillverkaren och därför mycket farlig.***
***Använd inte pumpen för vakuum/lobtryck för att hantera vätskor och antändliga och/eller explosiva material och för material som avger antändliga gaser.***
***Använd inte pumpen för vakuum/lobtryck i särskilt explosiva atmosfärer.***
***Ta aldrig bort skydden på pumpen och kontrollera varje gång maskinen ska användas att den är effektiv.***
***Alla ingrepp ska utföras med maskinen stillastående och av kompetent personal.***
***Personal som inte är kompetent är inte behörig för arbete på pumpen för vakuum/lobtryck eller för arbete nära denna.***
***Battioni Pagani ® är inte ansvarig för olägenheter, skador och olyckor till följd av att indikationerna i manualen inte följts, att aktuella bestämmelser inte respekterats och tillämpning av behörig aktsamhet under manövrer, underhålls- eller reparationsåtgärder försummats, även om de uttryckligen inte anges i denna manual.***

**Underlåtenhet att iaktta bestämmelserna i denna handbok kan resultera i följande faror:**

- Fara för klämning på grund av vikten på pumpen för vakuum/lobtryck under dess hantering och transport;
- Fara för att fastna i transmissionsorgan i fall av borttagning av lämpliga skydd (undvik kläder med vida ärmar, slipsar, armband, halsband etc.);
- Fara av termisk typ på grund av de temperaturer som kan uppnås av pumpen för vakuum/lobtryck;
- Fara för hörseln på grund av det genererade bullret och underlåtenhet att använda personlig skyddsutrustning;
- Fara för skärskador för operatören vid besiktning med in- och utsugsrör som lossas från pumpen för vakuum/lobtryck
- Fara för utskjutande fasta och flytande material till följd av allvarlig skada på pumpen för vakuum/lobtryck;

# Battioni ®
# Pagani

*Setting the pace since 1953*

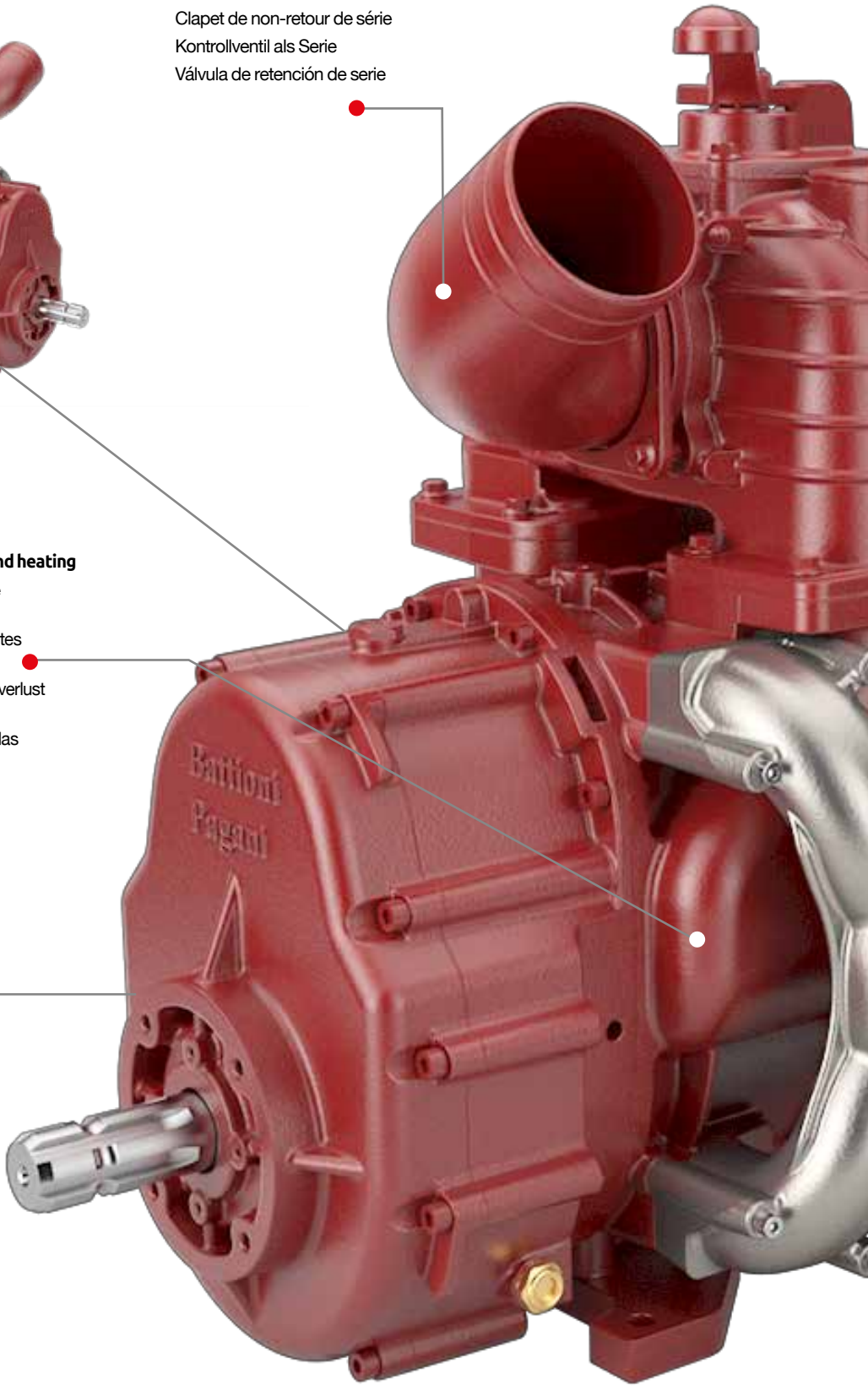
Battioni ®
Pagani

**Non-return valve standard**
Valvola di non ritorno di serie
Clapet de non-retour de série
Kontrollventil als Serie
Válvula de retención de serie

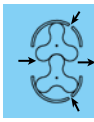
**Inspection Cover**
Coperchio ispezione
Capot d'inspection
Inspektionsabdeckung
Tapa de inspección

**Flow sections designed to minimize load losses and heating**
Sezioni di passaggio studiate per minimizzare perdite di carico e riscaldamento
Sections de passage étudiées pour minimiser les pertes de charge et le réchauffement.
Die Abschnitte wurden so ausgelegt, dass der Druckverlust und die Gefahr der Überhitzung minimiert werden
Secciones de paso estudiadas para minimizar pérdidas de carga y calentamiento

**Piston ring and shaft lip seals to prevent oil leakage**
Tenute a labirinto con segmenti e la tenuta a labbro sull'albero impediscono la fuoriuscita dell'olio
Les joints en labyrinthe avec segments et le joint à lèvre sur l'arbre empêchent les fuites d'huile
Kolbenring- und Wellenlippendichtungen verhindern das Austreten von Öl
Los sellos laberínticos con segmentos y el sello labial en el eje evitan las fugas de aceite.



Cooling



AIR INJECTION
COOLED - ROTARY
LOBE PUMP

# BLM

**Predisposition for overpressure valve**
Predisposizione per valvola di sovrappressione
Predisposition pour soupape de surpression
Veranlagung Für Überdruckventil
Predisposicion para valula de sobrepresion

**Optimized air injection cooling system to limit heating: continuous operation**
Sistema raffreddamento ad iniezione di aria ottimizzato per contenimento temperatura: funzionamento in continuo
Système de refroidissement par injection d'air optimisé pour le limiter la température: fonctionnement continu
Die Luftabkühlung sorgt für niedrige Temperaturen: Dauerbetrieb
Sistema enfriamiento de inyección de aire optimizado para retención de temperaturas: funcionamiento continuo

**Non-return valve standard**
Valvola di non ritorno di serie
Clapet de non-retour de série
Kontrollventil als Serie
Válvula de retención de serie

## VERSIONS

BLM / MA

The picture is only for informative pourpose.

## FOREWORD

The Battioni Pagani® vacuum/pressure blowers pumps were designed and constructed in compliance with the EEC safety regulations and were assessed for risks according to the standard UNI EN ***ISO*** 12100:2010; in particular they are in conformity with directive 2006/42/CE and subsequent modifications and additions.
Since the design of this pump complies with the definition of a machine as contained in the Machinery Directive 2006/42/EC, the pump bears the CE mark on its identification plate. However, it must be pointed out that because of its application and the purpose for which it is supplied, which specifies that it be installed by the buyer (without motive power), Battioni Pagani® refuses any and all responsibility if the instructions in this operation and maintenance manual are not followed.
This manual contains the Declaration of CE conformity and all the instructions required by users, and by the manufacturers of plant systems, for using our products safely. As a result, the manual must always be kept near the BLM vacuum/pressure blowers pump. Carefully read the instructions contained in this manual before proceeding with any operation with and on the BLM vacuum/pressure blowers pump.

***This danger symbol in the manual means that important instructions relating to safety are being provided. Operators are the first recipients of this information and are responsible for compliance, not only in relation to themselves, but also in relation to other persons exposed to the risks associated with use.***

The descriptions and illustrations in this manual are purely indicative.
The manufacturer reserves the right to make any type of change to this manual at any time.

## WARRANTY

At the moment of receiving the vacuum/pressure blowers pump, check that it is complete with all its parts.
Any anomalies or missing parts must be communicated within 8 days of receipt of the product.
The Supplier guarantees that the product sold is free from defects and undertakes to repair or, by final decision, to replace the faulty parts only if the defects are clearly attributed to the manufacturing process or to the materials used. In any case the costs of labour, travel and transport, and any customs expenses, shall be paid by the Purchaser. The vendor is not obliged to pay damages except in the case of fraud or serious offence.

All parts subject to normal wear are excluded from the warranty. The warranty will cease to be valid if:

- the faults reported are the result of accidents or obvious carelessness or negligence by the Purchaser,
- the parts have been modified, repaired or fitted by persons not authorised by the vendor,
- the failures and breakages have been caused by use that is unsuitable or heavier than that provided for by the vendor.
- the Purchaser has failed to make the payments as agreed under the contract.

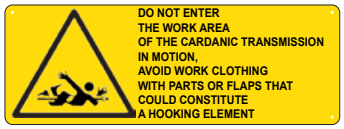
The warranty rights of the Purchaser are invalidated where the same does not report to the Vendor any defects within 8 days of discovery, notwithstanding the provisions of art. 1512 of the Italian Civil Code. The Vendor reserves the right to make changes or improvements to its products without any obligation to make such changes or improvements to the units already previously produced and/or delivered. The Vendor reserves the right to make changes or improvements to his/her products without being obliged to make the same changes or improvements to the units already produced and/or delivered previously.

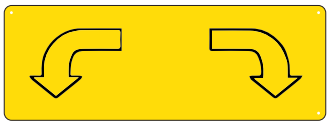
Thank you for choosing Battioni Pagani®.

65th Years ANNIVERSARY 1953 - 2018

# COMPULSORY SAFETY SIGNS THAT THE SYSTEM MANUFACTURER MUST PLACE AT THE WORKPLACE AND AROUND THE BLM VACUUM/PRESSURE BLOWERS PUMP

PERSONAL PROTECTION EQUIPMENT THAT MUST BE USED





INDICATION OF THE DIRECTION OF ROTATION OF THE HANDLE TO SELECT THE ASPIRATION OR COMPRESSION PHASES.

**DISPLAY THE SAFETY SIGNS IN A VISIBLE POSITION AND NEAR THE PUMP**

## CONDITIONS AND LIMITS OF USE – LIST OF DANGERS

***In the Common Market countries, the installation must comply with directive 2006/42/CE and subsequent modifications, while in the other countries it must comply with the safety regulations of the country.***
This pump for vacuum/pressure blowers was designed to create a vacuum or pressure inside a tank connected to it.

***Under no circumstances must liquids, dust or any kind of solid matter enter the vacuum/pressure blowers because they could cause it to break. Therefore it is necessary to equip the system with overflow safety valves.***
***Use of the vacuum/pressure blowers pump for any purpose other than that specified is absolutely forbidden, not provided for by the manufacturer and therefore highly dangerous.***
***Do not use the vacuum/pressure blowers pump to handle flammable and/or explosive liquids and materials or for materials that give off flammable gasses.***
***Do not use the vacuum/pressure blowers pump in a potentially explosive atmosphere.***
***Never remove the guards fitted on the vacuum/pressure blowers pump and always check their efficiency every time the machine is used.***
***Any intervention must be carried out with the machine stopped and by qualified personnel.***
***Unqualified personnel are not authorised to work on or near the vacuum/pressure blowers pump.***
***Battioni Pagani ® will not be responsible for problems, breakages and accidents due to failure to apply the instructions contained in the manual, non-compliance with current standards and failure to apply due diligence during the manoeuvre, maintenance or repair operations, even if not expressly mentioned in this manual.***
Failure to comply with the instructions provided in this manual may result in the following dangers:

- Danger of being crushed by the weight of the vacuum/pressure blowers pump during handling and transportation;
- Danger of becoming caught in the transmission parts in case of removal of the appropriate protections (avoid clothing with wide sleeves, ties, bracelets, necklaces, etc.);
- Heat dangers due to the temperatures that can be reached by the vacuum/pressure blowers pump;
- Acoustic danger due to the noise generated and to failure to use personal means of protection;
- Danger of severing for the operator during testing with intake and delivery tubes detached from the vacuum/pressure blowers pump;
- Danger of projection of fluid and solid materials owing to heavy breakage of the vacuum/pressure blowers pump;

# SUMMARY

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# 1.0 - GENERAL INFORMATION

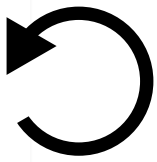
## 1.1 - GENERAL DESCRIPTION

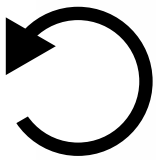
The BLM vacuum/pressure blowers pump is suitable to be used as an air compressor/decompresser, combined with a watertight tank suitable to be put into vacuum and under pressure the liquid loading/unloading/distribution. The vacuum/pressure blowers pump is equipped with three adjustable bends.
One bend is in communication with the tank, the other in the atmosphere and the third one is connected to the Ballast cooling. By appropriately turning the reversing gear inside the vacuum/pressure blowers pump, it is possible to connect the intake to one of the elbows creating where necessary vacuum or pressure inside the tank.
Pumping of the air is obtained through the rotation of two suitably shaped rotors that counter-rotate in relation to each other.
The incoming air is trapped in a chamber formed by the body and the rotors thanks to the particular shape of the latter and discharged to the output.

| PUMP FOR BLM VACUUM/PRESSURE BLOWERS | |
|---|---|
| | Neither a cooling system nor lubrication is required in the pumping zone: the air discharged into the atmosphere is also free from pollutants such as oil, resins etc...<br>The pumping capacity is obtained by careful control of the distances of the rotors from each other and with the body of the vacuum/pressure blowers pump. |

## 1.2 - BLM VERSIONS

The BLM vacuum/pressure blowers pump is available in the following versions:

| VERSION BLM / MA (WITH GEARBOX) | |
|---|---|
| **CCW standard**<br>  <br> | **BLM / MA** The PTO is driven via a cardan shaft at 1000 rpm. The version can be recognised by the gearbox located on the rear of the vacuum/pressure pump and by the identification plate bearing the wording:<br>MA = CARDANIC TRANSMISSION 1000 rpm |

| VERSION BLM / MA / SC (WITHOUT MANIFOLD) | |
|---|---|
| **CCW standard**<br>  <br> | **BLM / SC** The SC version can be recognised by the fact that the pump does not have a manifold, but two sleeves, and by the identification plate bearing the wording:<br>SC = WITHOUT MANIFOLD |

## 1.3 - TECHNICAL DATA

| MODELS | QG* | SPEED (RPM) | VACUUM | | | | PRESSURE (BAR ABS) | | WEIGHT KG | SPL DB (A) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 30 % L/MIN M³/H CFM KW | 60 % L/MIN M³/H CFM KW | 80 % L/MIN M³/H CFM KW | MAX BAR KW | 1.5 BAR L/MIN M³/H CFM KW | 2.0 BAR L/MIN M³/H CFM KW | | |
| BLM 160 MA | 978 M³/H 16300 L/MIN 575 CFM | 1000 | 13817 829 488 11 | 11684 701 413 18 | 8825 530 312 24 | -0.87 25 | 14158 850 500 15 | 13667 820 483 28 | 225 | 80 |
| BLM 190 MA | 1130 M³/H 18800 L/MIN 664 CFM | 1000 | 16268 976 574 13 | 14078 845 497 22 | 11146 669 394 29 | -0.88 30 | 16618 997 587 18 | 16119 967 569 33 | 225 | 80 |
| BLM 220 MA | 1280 M³/H 21300 L/MIN 752 CFM | 1000 | 18333 1100 647 14 | 15817 949 559 24 | 9625 578 340 31 | -0.90 33 | 18733 1124 662 20 | 18167 1090 642 37 | 250 | 82 |
| BLM 250 MA | 1477 M³/H 24600 L/MIN 868 CFM | 1000 | 21238 1275 750 17 | 18958 1138 669 28 | 15503 931 547 37 | -0.90 40 | 21952 1317 775 24 | 21364 1282 754 44 | 250 | 82 |
| BLM 280 MA | 1660 M³/H 27700 L/MIN 978 CFM | 1000 | 25108 1507 887 24 | 20125 1208 711 38 | 14663 880 518 45 | -0.9 45 | 25300 1519 893 31 | 24054 1444 849 54 | 305 | 84 |
| BLM 310 MA | 1855 M³/H 30900 L/MIN 1090 CFM | 1000 | 28083 1686 992 26 | 23750 1426 839 42 | 17500 1050 618 51 | -0.9 55 | 27500 1651 971 33 | 26250 1576 927 58 | 330 | 84 |
| BLM 360 MA | 2136 M³/H 35600 L/MIN 1257 CFM | 1000 | 31184 1872 1101 34 | 27417 1646 968 47 | 22425 1346 792 59 | -0.9 65 | 31146 1869 1100 46 | 28558 1714 1009 70 | 330 | 84 |

**QG: Volume displacement at maximum speed**

**REFERENCE CONDITIONS**
Gas conveyed: Air
Reference temperature 20°C (68°F)
Absolute reference pressure 1013 mbar (14.7 psi)
The data reported in the table are subject to a tolerance of +/- 5% .

**OPERATING LIMITS**
Maximum pressure 2 bar (ABS)
Maximum discharge temperature 150°C (302°F)
Minimum ambient temperature -20°C (4°F)
Maximum ambient temperature +40°C (104°F)

**SOUND PRESSURE (SPL)**

Pump sound pressure with injection silencer and discharge silencer.
Operating conditions: 80% of the maximum speed, vacuum at 60% and distance of 7 metres in open field.

## 1.4 - OPTIONAL BLM

**Rotary Cylinder Hydraulic**
**Ø 100** Code 5090000108
**Ø 120** Code 5090000150

**Hydraulic Cylinder**
**Ø 100** Code 6080200315
**Ø 120** Code 6080200510

**Rotary Cylinder Pneumatic**
**Ø 100** Code 6080200306
**Ø 120** Code 6080200508

**Air Suction Filter Kit**
1300 Code 6080200535 BLM 160 -250
3300 Code 6080200514 BLM 280-360

**Flushing Kit**
Code 6080200325

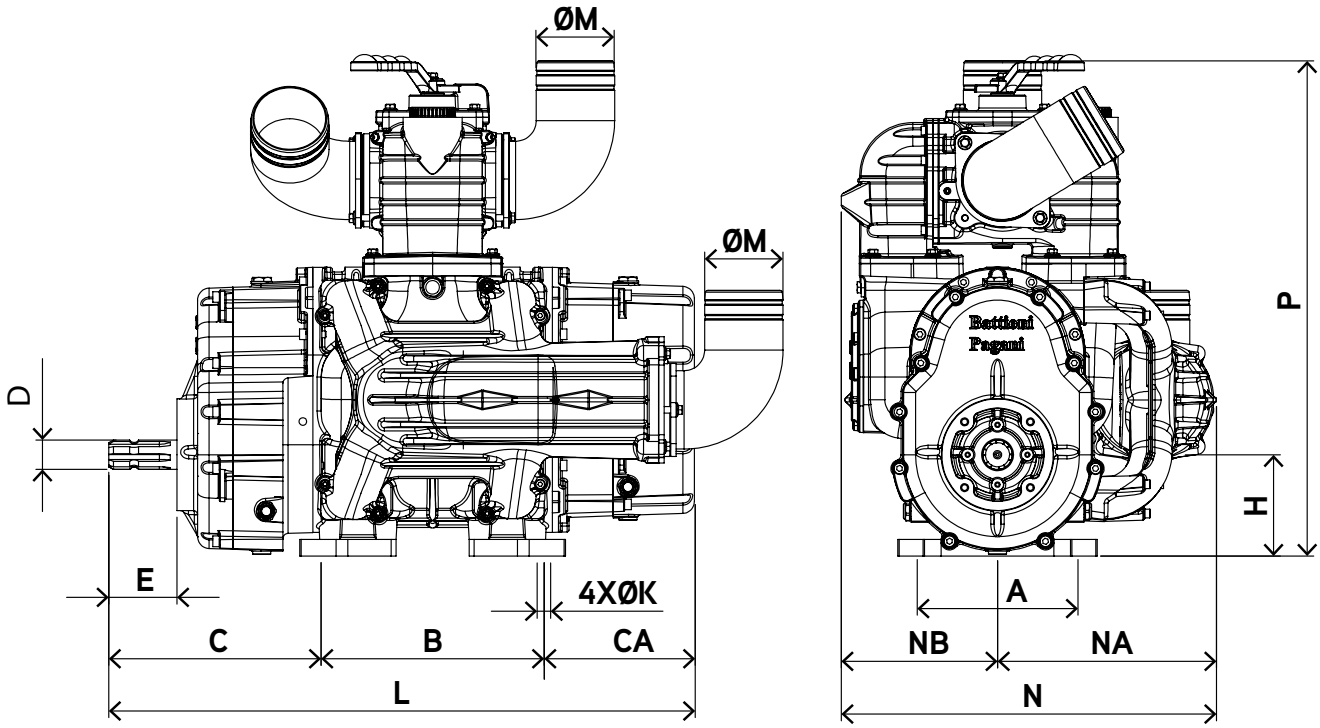
**Battioni Pagani Flushing Fluid** 5 l
Code 5070200102

**Pump Active Controller**

**Coating**
**Custom-made on request**

## 1.5 - OVERALL DIMENSIONS

BLM /MA




| MODEL MODEL | A | B | C | CA | D | E | H | ØK | L | ØM | N | NA | NB | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BLM 160 | 260 | 224 | 314 | 206 | 1"3/4 | 96.5 | 120 | Ø18 | 744 | Ø100 | 540 | 325 | 214 | 650 |
| BLM 190 | 260 | 224 | 314 | 206 | 1"3/4 | 96.5 | 120 | Ø18 | 744 | Ø100 | 540 | 325 | 214 | 650 |
| BLM 220 | 260 | 300 | 311 | 203 | 1"3/4 | 96.5 | 120 | Ø18 | 814 | Ø100 | 540 | 325 | 214 | 650 |
| BLM 250 | 260 | 300 | 311 | 203 | 1"3/4 | 96.5 | 120 | Ø18 | 814 | Ø100 | 540 | 325 | 214 | 650 |
| BLM 280 | 260 | 274 | 304 | 217 | 1"3/4 | 96.5 | 152.5 | Ø18 | 808 | Ø120 | 565 | 330 | 235 | 745.5 |
| BLM 310 | 260 | 354 | 304 | 217 | 1"3/4 | 96.5 | 152.5 | Ø18 | 888 | Ø120 | 565 | 330 | 235 | 745.5 |
| BLM 360 | 260 | 354 | 304 | 217 | 1"3/4 | 96.5 | 152.5 | Ø18 | 888 | Ø120 | 565 | 330 | 235 | 745.5 |

## 1.6 - IDENTIFICATION PLATE

The BLM vacuum/pressure blowers pump is provided equipped with an identification plate on which are indicated:

- model name
- serial number
- year of manufacturing
- maximum relative pressure
- maximum vacuum
- maximum absorbed power
- maximum number revolutions
- max weight capacity
- CE Marking
- weight

***Each identification plate is protected with a special protective film that can be removed once painted.***
***This film was introduced to ensure the traceability of the above information and to avoid invalidating the warranty.***

# 2.0 - PACKING, STORAGE, HANDLING AND TRANSPORTATION

## 2.1 - GENERAL INSTRUCTIONS FOR THE USER AND OPERATOR

Before starting the vacuum/pressure blowers pump, it is essential that the operator knows how to perform all the operations described in this manual and how to apply them each time during use or maintenance of the vacuum/pressure blowers pump.
The operator should not perform under their own initiative operations or interventions that are not permitted in this manual.
Before performing maintenance on or repairing the blowers pump, it is necessary to make sure that it is impossible to start the vacuum/pressure blowers pump, therefore it is mandatory to disconnect the shaft drive from the PTO. This is to prevent accidental starting that could cause injury to persons and/or damage to the vacuum/pressure blowers pump.
Starting from 70°C the user must install and the operator must use adequate protection devices to prevent direct contact with hot parts of the blowers pump. Before carrying out maintenance or repair operations on the vacuum/pressure blowers pump, wait for it to cool down to at least a temperature of below 40°C.

## 2.2 - PACKAGING

The vacuum/pressure blowers pump is supplied unpacked. Upon request the following packaging types are available:

- Wooden base and shrink-wrap;
- Wooden cases and shrink-wrap for shipment by sea or air;

## 2.3 - STORAGE

In order to preserve the vacuum/pressure blowers pump correctly, it must be stored:

- Indoors, sheltered from adverse weather conditions;
- Resting horizontally on its four feet.
- Climatic storage conditions:
  Temperature between -20°C and 40°C
  Relative humidity from 15% to 80%
  For different weather conditions, contact the Battioni Pagani®technical office
- The material stored in the warehouse must be protected periodically (every 6 months) with protective oil which must be sprayed on the inside of the pump to protect the rotors and the pump body.

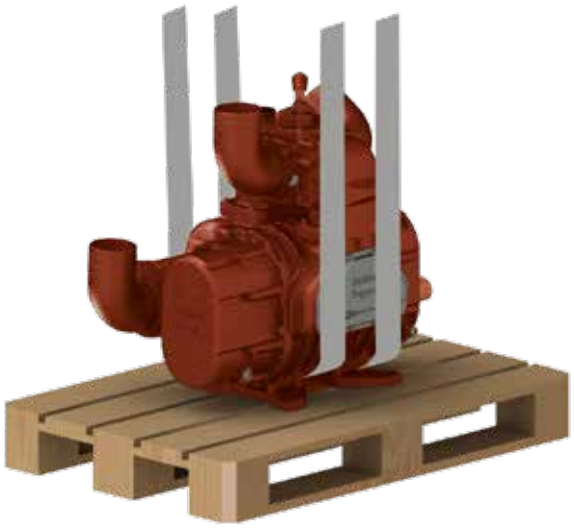
## 2.4 - HANDLING AND TRANSPORTATION

To view the data concerning the mass of the BLM vacuum/pressure blowers pump, consult the technical data annexed to paragraph 1.3 - TECHNICAL DATA.

The BLM vacuum/pressure blowers pump must be handled:

- Exclusively using equipment with adequate load and capacity strength.
- Harnessed with a strap;
- Lifted by forklift truck (if on pallet), bridge crane, crane or hoist.

Loosen the screws that secure the 4 feet of the vacuum/pressure blowers pump to the pallet.
For safety reasons, use a strap to lift the vacuum/pressure blowers pump.
Pass the strap beneath the vacuum/pressure blowers pump, between the fixing feet, as shown in the figure, or between the body and the manifold where possible.
Attach the strap to the lifting equipment.



# 3.0 - INSTALLATION

*The BLM pump must be placed vertically on a flat horizontal surface with a maximum inclination of 5° and fixed by means of screws that lock the feet.*

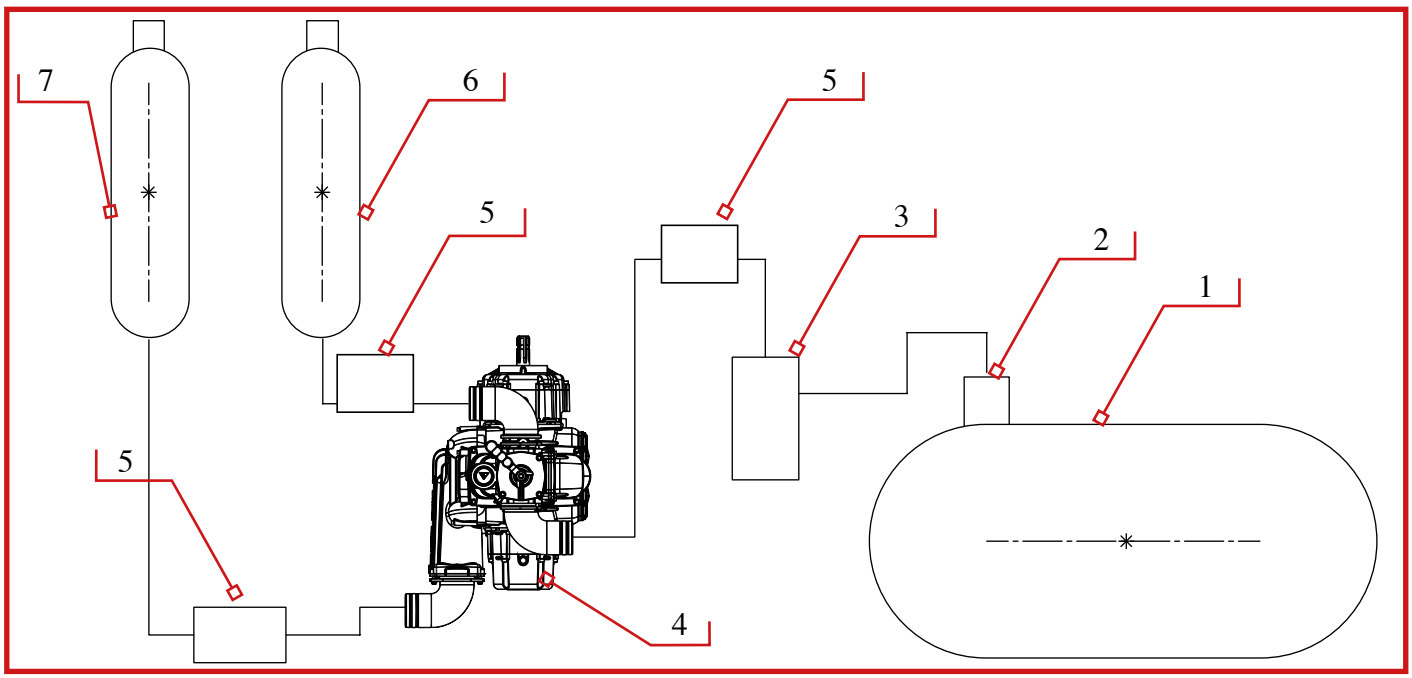
*All installation operations must be carried out with the utmost care by suitably trained personnel and with the power take-off disconnected.*

*During installation operations, it is advisable to use the personal protection equipment listed to the side.*

*Should it be necessary to paint the vacuum/pressure blowers pump, do not paint the identification plate, the oil level indicator and the vent plugs.*
*Always avoid the entry of liquids arriving from the tank inside the vacuum/pressure blowers pump. IT IS therefore necessary to provide a system for the interception of the liquids coming from the tank in order to prevent their entry into the pumping zone.*

*Provide a noise reduction system both for the main air circuit and for the cooling circuit.*

## 3.1 - INSTALLATION DIAGRAM




**1. Cistern**
**2. Primary valve**
**3. Secondary valve**
**4. AIDA vacuum/pressure blowers pump**
**5. Air circuit filter (OPTIONAL)**
**6. Main air silencer**
**7. Air cooling circuit silencer .**

The vacuum/pressure blowers pump should be assembled and installed using the following procedure:
1) Assemble the vacuum/pressure blowers pump horizontally with its feet facing downwards.
2) Bolt the vacuum/pressure blowers pump via passing screws and nuts in the appropriate slots or holes provided in the feet.
3) For the operation of the vacuum/pressure blowers pump, it is necessary to connect the 1" 3/4 PTO of the pump to the cardan shaft.
4) Then connect the intake/compression pipe of the tank car to the BLM vacuum/pressure blowers pump tightening it to the adjustable elbow using metal clamping bands in relation to the diameter of the pipe.

*Do not exceed the maximum inclination permitted by the cardan shaft.*

# 4.0 - TESTING AND RUNNING IN

*During testing and break-in operations it is advisable to use the personal protection equipment listed to the side.*

ENGLISH

## 4.1 - TESTING

All Battioni Pagani®vacuum/pressure blowers pumps are tested before delivery at our factory.

## 4.2 - RUNNING IN

The running in period foreseen for a vacuum/pressure blowers pump is 30 effective working hours. During that period the working parameters must be reduced by 20%.

*ATTENTION: do not operate the vacuum/pressure blowers pump in the opposite direction of rotation.*

# 5.0 - START-UP, OPERATION, SHUTDOWN

## 5.1 - START-UP

*During start-up, operation and shutdown manoeuvres it is advisable to use the personal protection equipment listed to the side.*

The vacuum/pressure blowers pump does not have a start command. To start it simply transmit motion to the PTO in the manner appropriate to the version being used. Make sure, before starting the motor, that the vacuum/pressure blowers pump is supplied with oil for lubrication of the bearings and gears in the front and rear casing.

*Before starting the vacuum/pressure blowers pump, ensure that the guards on all the moving parts are in place and efficient. Any damaged or missing components must be replaced and installed correctly.*

## 5.2 - DAILY CHECKS TO BE PERFORMED

| | CHECK | FREQUENCY |
|---|---|---|
| CHECKS TO BE PERFORMED | Check Pressure | DAILY |
| | Check temperature | |
| | Check absorbed power | |
| | Check abnormal noises | |
| | Oil level (front and rear) | |

*During the first few hours of operation, check that there are no abnormal vibrations or noises. In the event of anomalies, stop the vacuum/pressure pump immediately and contact the Battioni Pagani®Service*

## 5.3 - OPERATING LIMITS

*During use, do not exceed the conditions of speed and power established by the manual.*

*ATTENTION: the BLM is not suitable for conveying toxic, flammable or dangerous gases.*

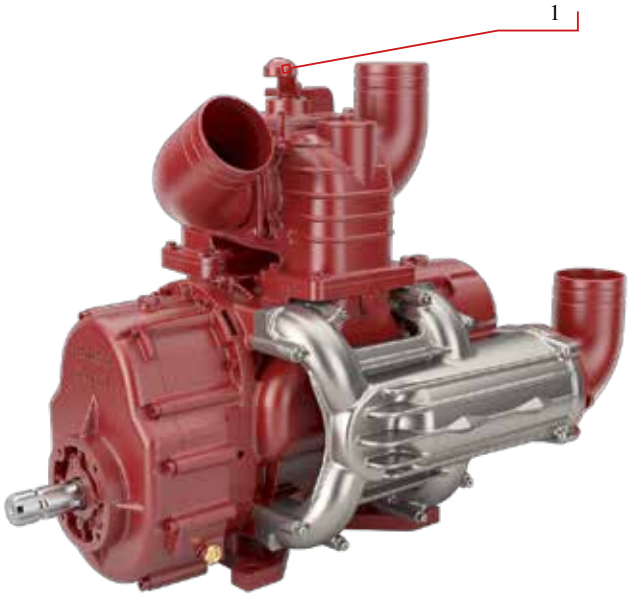
*ATTENTION: the BLM is not suitable for working in potentially explosive environments.*

*ATTENTION: the introduction of solids or liquids will seriously damage the BLM.*

## 5.4 - CONTROL DEVICES

A handle (**1**), located at the top of the manifold, is provided for the control of intake and compression phases. This can be operated manually. To establish in which direction the handle must be turned to select the intake or compression phase, follow the instructions provided by the manufacturer of the system. If the reversing gear locks up, use a lever to lift the handle.

***Selection of the suction or compression phase using the handle must be performed with the blowers pump stopped.***




## 5.5 - STOP

To stop the vacuum/pressure blowers pump, it is necessary to suspend the PTO motion transmission in order to avoid unintentional activation. Eliminate the differential pressure from the system and bring it back to atmospheric pressure.

# 6.0 - MAINTENANCE



*During all maintenance operations it is advisable to use the personal protection equipment listed to the side.*

*All maintenance operations, inspections, checks and repairs should be carried out with the greatest care and with the power take-off disconnected.*

*Before proceeding with maintenance operations, it is advisable to wait for the BLM pump to cool down and to return to a temperature of below 40°C.*

*Before performing maintenance, remove the differential pressure from the system and restore it to atmospheric pressure.*

## 6.1 - UNINSTALLING THEBLM VACUUM/PRESSURE BLOWERS PUMP

The vacuum/pressure blowers pump must be uninstalled using the following procedure:

| BLM / MA |
|---|
| 1) Stop the PTO of the tractor. |
| 2) Disconnect the cardan shaft. |
| 3) Remove the connection pipe that joins the tank to the BLM pump, unscrewing the metal clamp and removing the pipe from the sleeve. |
| 4) Remove any hydraulic or pneumatic connections. |
| 5) Remove the fixing screws and uninstall the BLM vacuum/pressure blowers pump. |

## 6.2 - TYPES OF MAINTENANCE AND RELATED FREQUENCY

The following table shows the maintenance required to keep the machine in perfect working order.

| TYPE OF MAINTENANCE | FREQUENCY |
|---|---|
| Oil level inspection | upon each use |
| Manifold cone greasing | every week |
| Filter cleaning | where required |
| Oil top-up | where required |
| Oil replacement | 1000 work hours or 12 months |
| Seal replacement | when necessary or each time the parts that contain the seals open |
| Checking of operation of the manifold check valve and Ballast | 12 months |
| Replacement of the manifold check valve and Ballast | 3 years |

## 6.3 - RECOMMENDED SPARE PARTS

The table shows the recommended spare parts for normal use of the vacuum/pressure blowers pump according to their envisaged service life.

| DESCRIPTION | OPERATION | | |
|---|---|---|---|
| | 1 year | 3 years | 5 years |
| Bearings and ring nuts (KIT) | - | 1 | 2 |
| Cogged wheels (KIT) | - | 1 | 2 |
| Segment seals (KIT) | - | 1 | 2 |
| Lip seal-type seals (KIT) | 1 | 2 | 4 |
| OIL CAPS (KIT) | 1 | 2 | 4 |
| Seals (KIT) | 1 | 2 | 4 |
| Check valve | - | 1 | 2 |

***Battioni Pagani® disclaims any responsibility for breakages or accidents due to the use of non-original spare parts.***

## 6.4 - LUBRICANTS SUGGESTED FOR LUBRICATION

For lubrication of the vacuum/pressure blowers pump, the use of an ISO VG 220 synthetic oil based on polyalphaolefins for high temperatures is recommended. In the internal tests carried out at our factory, the Mobil SHC 630 oil based on PAO was tested.

***Do not use mineral oil with EP additives or synthetic oil based on silicones or diesters.***

## 6.5 - OIL LEVEL INSPECTION

- Upon each use check of the pump check the oil level by means of the oil level inspection points.
- Repeat the operation both in the front casing and in the rear casing.
- The oil level must be checked with the pump stopped and cold

## 6.6 - OIL TOP UP

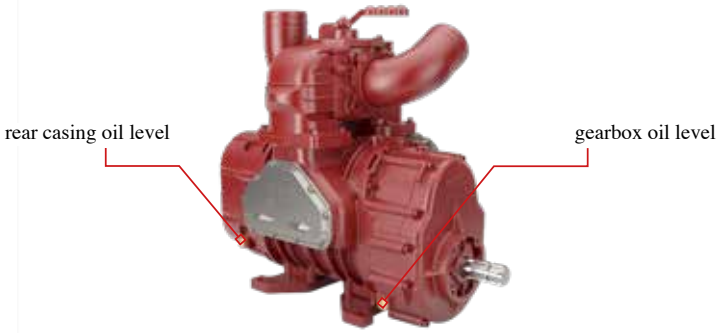
If, at the end of a periodic inspection, the oil level proves to be low, top up.

- Unscrew and remove the oil filler cap.
- Add the correct quantity of oil, checking the level from the oil level inspection point.
- Tighten the filler cap.
- Repeat the operation both in the front casing and in the rear casing.

## 6.7 - OIL CHANGE

Every 1000 hours of work or 12 months, replace the oil in both the gearbox and in the rear casing.

- Place a container suitable to recover the used oil beneath the oil drain plug.
- Unscrew and remove the oil drain cap.
- To facilitate the emptying process, unscrew and remove the oil filler cap.
- Before proceeding to insert the oil in the casings, check that the oil drain plugs are tightly closed.
- Open the oil drain plugs and proceed with oil insertion to the pre-set level using a fully synthetic oil PAO ISO VG 220.
- Repeat the operation both in the gearbox and in the rear casing.
- Tighten the oil filler caps.




| MODEL | OIL QUANTITY | | |
|---|---|---|---|
| | FRONT CASING | REAR CASING | TOTAL |
| BLM 160 - 190 - 220 - 250 MA | 0.80 litres | 0.80 litres | 1.6 litres |
| BLM 280 - 310 - 360 MA | 0.90 litres | 0.90 litres | 1.8 litres |

## 6.8 - DISMANTLING AND REASSEMBLY

It is not permitted to disassemble the BLM vacuum/pressure blowers pump during the warranty period, otherwise it will be forfeited. In the event of disassembly, any repairs and reassembly must only be performed by qualified and authorised personnel. Only the instructions for routine maintenance are provided in this manual. Damage caused by incorrect operations performed during the disassembly and reassembly of the BLM is not covered by the warranty.

### 6.8.1 DISMANTLING

***During all disassembly operations, it is advisable to use the personal protective equipment listed to the side.***

***All disassembly operations must be carried out with the utmost care and with the power take-off removed.***

***Before proceeding with the disassembly, remove the differential pressure from the system and restore it to atmospheric pressure.***

***Before proceeding with disassembly operations, it is advisable to wait for the BLM pump to cool down and to return to a temperature of below 40°C.***

### 6.8.2 DISMANTLING THE GEARBOX

- Empty any oil out of the gearbox
- Remove the protection from the gearbox cover
- Loosen the fixing screws from the gearbox cover

### 6.8.3 REAR CASING DISASSEMBLY

- Empty the oil casing
- Unscrew the casing fixing screws

## 6.9 - REASSEMBLY

Before refitting the gearbox cover or the rear casing, thoroughly clean all the parts and dampen with oil any parts that will be sliding against one another.

### 6.9.1 REASSEMBLING THE GEARBOX

- Assemble the gearbox cover with interpositioning of a new seal.
- the gearbox cover with the screws.
- Lubricate the sealing lip and the sliding seat on the shaft with grease.
- Assemble the oil seal on the gearbox cover using a suitable buffer to avoid damaging the lip of the seal.
- Return the oil level to the correct value.

### 6.9.2 REASSEMBLY OF THE REAR CASING

- Mount the rear casing with a new seal.
- Secure the casing with the screws
- Return the oil level to the correct value

# 7.0 - CLEANING

## 7.1 - BODY WASH

Battioni Pagani® recommends the use of Battioni Pagani Flushing Fluid, a fluid for the cleaning and protection of pumps, designed for maintenance of the Battioni Pagani® vacuum/pressure pumps.
Perform an internal wash with the Flushing Fluid every 10 hours of work and whenever material enters the pump.
To correctly preserve the vacuum/pressure blowers pump, its body must be washed before any lengthy period of inactivity.

***ATTENTION: Do not use water to wash the body to avoid the formation of rust.***

# 8.0 - TROUBLESHOOTING

| PROBLEMS | CAUSES | SOLUTIONS |
|---|---|---|
| Little or no vacuum or pressure | Air infiltration or leakage from the system | Check the system |
| | Reversing gear incorrectly positioned | Position reversing gear correctly |
| | The pump is running in reverse | Reversing the direction of rotation |
| | The pipes are poorly applied | Check the system |
| | The Ballast check valve does not work | Examine the check valve |
| | Filter clogged | Clean the filter |
| Excessive heating of the vacuum/ pressure blowers pump | Excessive pressure | Reduce pressure |
| | Excessive vacuum | Reduce vacuum |
| | Excessive operating time | Rotate the pump in freeblowing mode |
| | Ballast duct obstructed | Verify correct functioning of ballast system (cap + silencer + pipe + valve) |
| | Filter clogged | Clean the filter |
| Output of pumped liquid in the tank from the silencer | Malfunctioning of primary and secondary valves | Check valves |
| | Secondary valve full | Empty secondary valve |
| The BLM rotates in the opposite direction at the end of the work cycle | Non-functioning check valve | Fix the check valve |
| P.T.O. does not rotate | A foreign body has penetrated the pumping chamber | Remove the foreign body through the rotor inspection door |
| | Rotors stuck | Open the hatch and wash with descaling liquid |

## 8.1 - TECHNICAL ASSISTANCE

Contact Battioni Pagani®authorised distributors for technical assistance or supply of accessories and spare parts.

# 9.0 - PUTTING OUT OF SERVICE AND DEMOLITION

Before demolishing the BLM vacuum/pressure blowers pump, it is necessary to divide the following materials:

- lubricating oil;
- parts in rubber and plastic;
- parts in cast iron and steel;
- aluminium parts;
- once separated, the items must be disposed of in an appropriate manner according to the regulations in force.

Do not discard the vacuum/pressure blowers pump into the environment.
For disposal of the lubricating oil make use of specialised treatment services.

***Dispose of the used oil in accordance with the local regulations in force.***

# Battioni ®
# Pagani

*Setting the pace since 1953*

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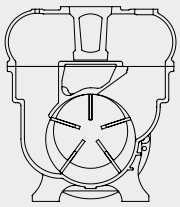
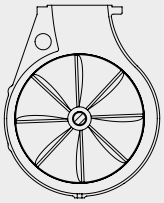
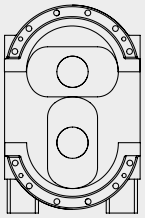
| ***Rev.*** | ***Data*** | ***Motivo*** | ***Preparato*** | ***Approvato*** | ***Autorizzato*** |



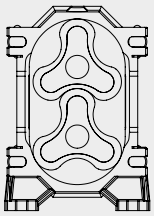
Rotary vanes
vacuum pump



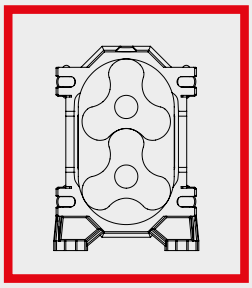
Centrifugal pump



Rotary postive displacement
lobes pump



Rotary postive displacement
lobes pump



Rotary lobes
vacuum pump

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