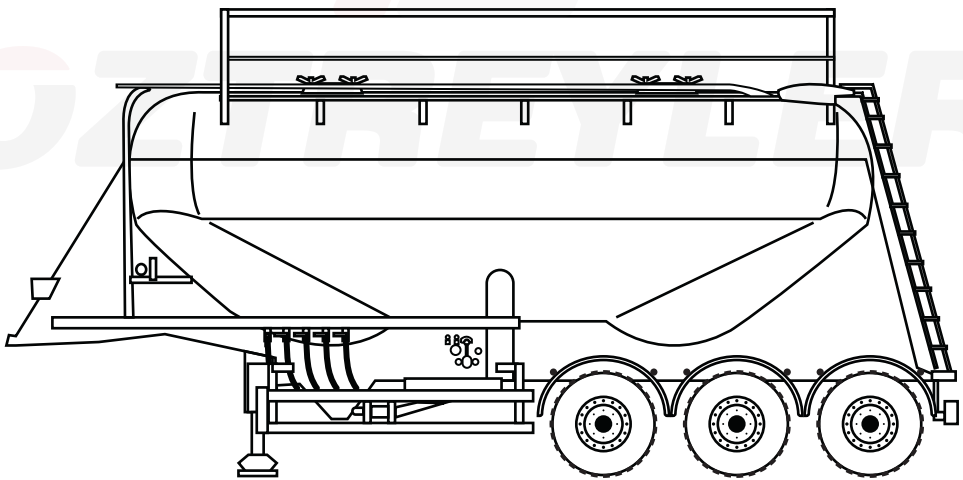
ÖZTREYLER

SİLOBAS
KULLANMA KILAVUZU

SILO
USER MANUAL



İÇİNDEKİLER

SİSTEMİN TANIMI

Silo Yarı Römork; dökme yük tabir edilen çimento, kül, silis kumu, un, kireç gibi yükleri taşımak için alüminyum, çelik veya paslanmaz çelikten imal edilmiş tek veya çok hunili tank gövdesi ile bunlara bağlanan dolum ve boşaltım için kullanılan elemanlardan oluşan komple bir ekipmandır.

EKİPMAN KULLANIM ÖMRÜ 10 (ON) YILDIR. (4077 SAYILI KANUN GEREĞİ)

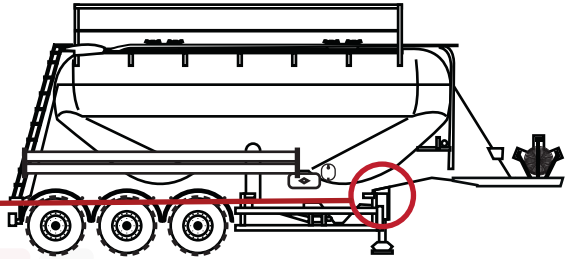
Model	Özellik	Kullanım Yeri
SAWT	Silo komple Alüminyumdan imal edilmiş ve W tip çok hunili gövde yapısına sahiptir.	Yüksek emniyetli, modern, Hafif ancak pahalı bir sistemdir.
SYWT	Silo komple Karbon Çeliğinden imal edilmiş ve W tip çok hunili gövde yapısına sahiptir.	Yüksek emniyetli, modern, Ağır ancak SYVT tip tek hunili Modele göre hafif ve pahalı bir sistemdir.
SYVT	Silo komple Karbon Çeliğinden imal edilmiş ve V tip Tek hunili gövde yapısına sahiptir.	Günümüze kadar güncelliğini korumuş bir sistemdir. Ülkemiz de dahil Birçok ülkede hala bu modeller kullanılmaktadır.

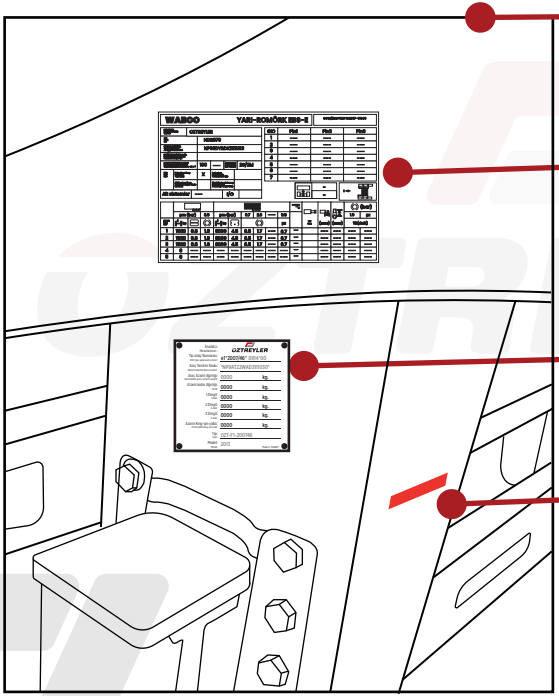
YAPILACAK KONTROLLER VE SİSTEMİN ÇALIŞTIRILMASI

YÜKLÜ ARACIN SİLOSUNDAKİ YÜKÜ BOŞALTMAK İÇİN, ARACI DÜZ VE SERT BİR ZEMİNDE DURDURUNUZ. EL FRENİ ÇEKEREK, ARACI DURDUĞU YERDE SABİTLEYİNİZ. İLK ÖNCE SİLO BOŞALTMA ÇIKIŞI İLE BOŞALTMA YERİ ARASINDA BOŞALTMA HORTUMU MONTAJINI YAPINIZ

ÖNEMLİ: DOLUM VEYA BOŞALTIM YAPMADAN ÖNCE SİSTEM BASINCINI KONTROL EDİNİZ VE **0bar (Sıfır)** OLDUĞUNU GÖRÜNÜZ.

TAMPON SİSTEMİ (Arka koruma)





ALB Etiketi

Şasi Etiketi

Şasi Numarası

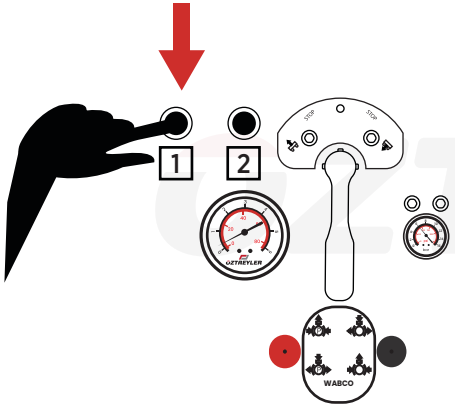
DOLUM İŞLEMİ PRENSİPLERİ

DOLUM İŞLEMİ İÇİN DOLUM TESİSİ ŞARTNAMELERİNE UYULMALIDIR.

DOLUM İŞLEMİNE BAŞLAMADAN ÖNCE HUNİ ALTINDAKİ PİNCH VANA KUMANDALARININ KAPALI POZİSYONDA OLDUĞU KONTROL EDİLMELİ, DEĞİLSE KAPALI POSİZYONA GETİRİLMELİDİR.

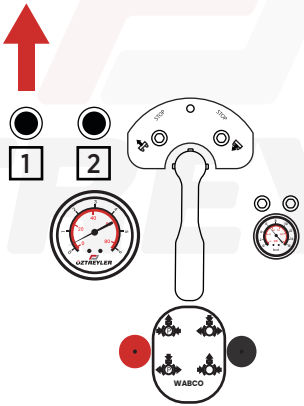
DOLUM/Filling

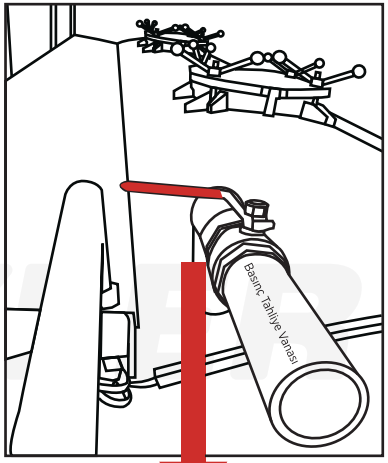
PINCH VALF Kapalı
Pinch Valve OFF
Çekili Durumda



Boşaltma/Discharge

PINCH VALF Açık
Pinch Valve ON
Basılı Durumda

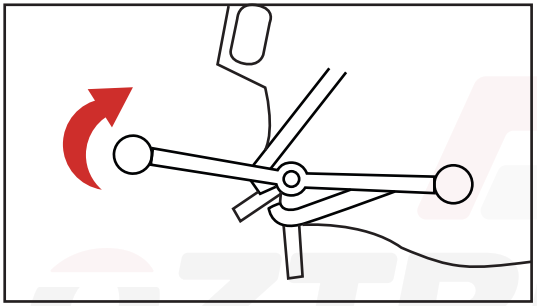




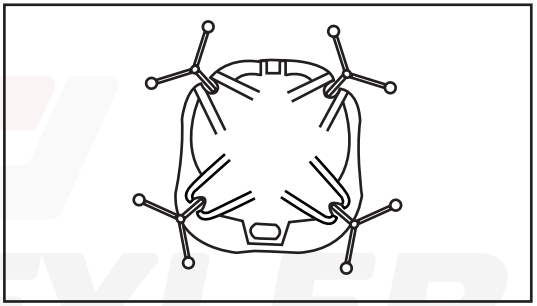
Menhol Kapağını AÇMA'dan ÖNCE TANK içindeki Basınçlı hava olmasına karşın TAHLİYE VANASINI AÇIN.

MENHOL KAPAĞI AŞAĞIDAKİ ŞEKİLDE AÇILMALI VE ARAÇ DOLUM TESİSİNDEKİ DOLUM HUNİSİ ALTINA YERLEŞTİRİLMELİDİR.

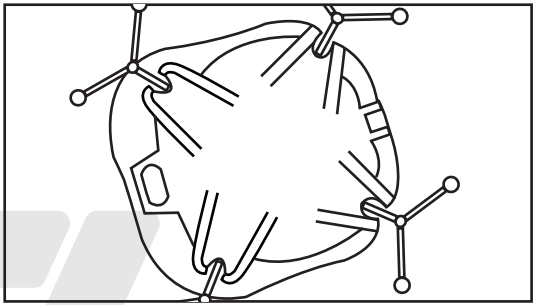
Sadece elinizi kullanarak kapak etrafındaki saplamaları sökün.



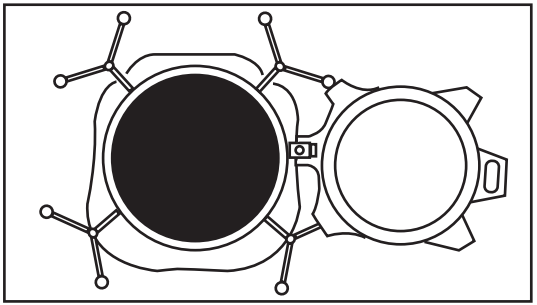
Sökülen saplamaları aşağıdaki gibi kapağı engellemeyecek şekilde bırakın.



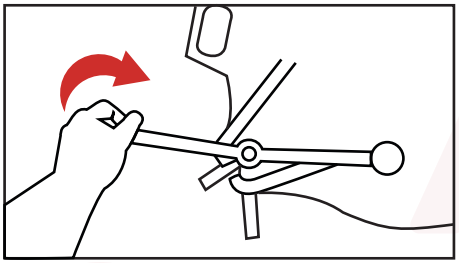
Kapağı tutma yerinden elinizle tutarak açın.



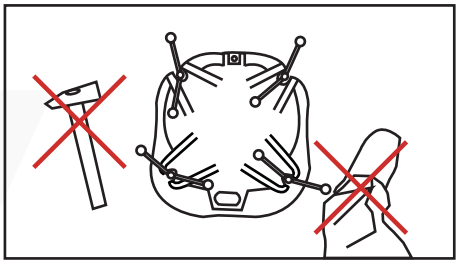
Komple açılmış kapak.



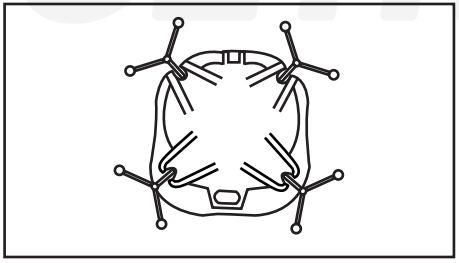
DOLUM İŞLEMİ BİTTİKTEN SONRA MENHOL KAPAĞININ KAPANACAĞI YÜZEYDEKİ VARSA DOLDURULMUŞ MALZEME TEMİZLENMELİ VE KAPAĞIN EŞİT BİR ŞEKİLDE OTURMASI VE SIZDIRMAZ BİR SIKMA SAĞLANMALIDIR.



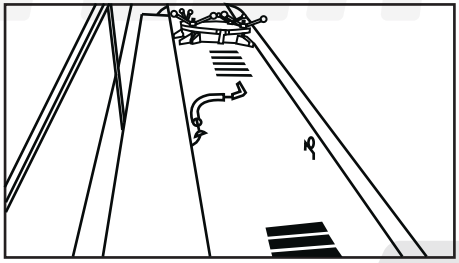
Sadece elinizi kullanarak kapak etrafındaki saplamaları SIKIN.



Menhol kapağını AÇMAK ve KAPATMAK için kesinlikle TEKME, ÇEKİÇ ve BORU KULLANMA.

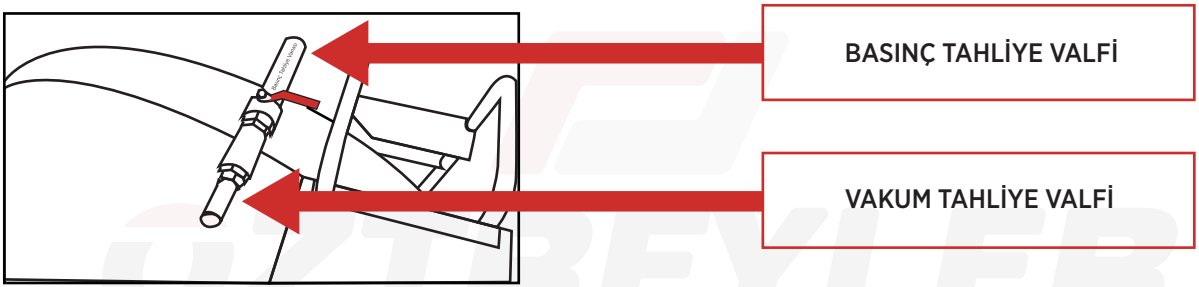


Komple kapanmış ve saplamaları sıkılmış kapak



Dolum işleminden sonra Üst kısımdaki Hava Tabancası ile Aracın Üzerini temizleyin ve Nakliye sırasında üstteki kalıntıların uçuşmasını engelleyin.

- DOLUM İŞLEMİ YAPILDIKTAN VE ÜST KISIM TEMİZLENDİKTEN SONRA AŞAĞIYA İNİLİR VE KORKULUK KAPATILIR.
- SEYAHAT SIRASINDA HAVA KOŞULLARINDAN DOLAYI OLUŞABİLECEK ÖZELLİKLE VAKUMUN GİDERİLMESİ İÇİN ÜST TAHLİYE VANASI AÇIK BIRAKILMALIDIR. (EĞER ÜST TAHLİYE VANASI ARKASINDA VAKUM EMNİYET VALFİ VARSA BUNA GEREK YOKTUR.)

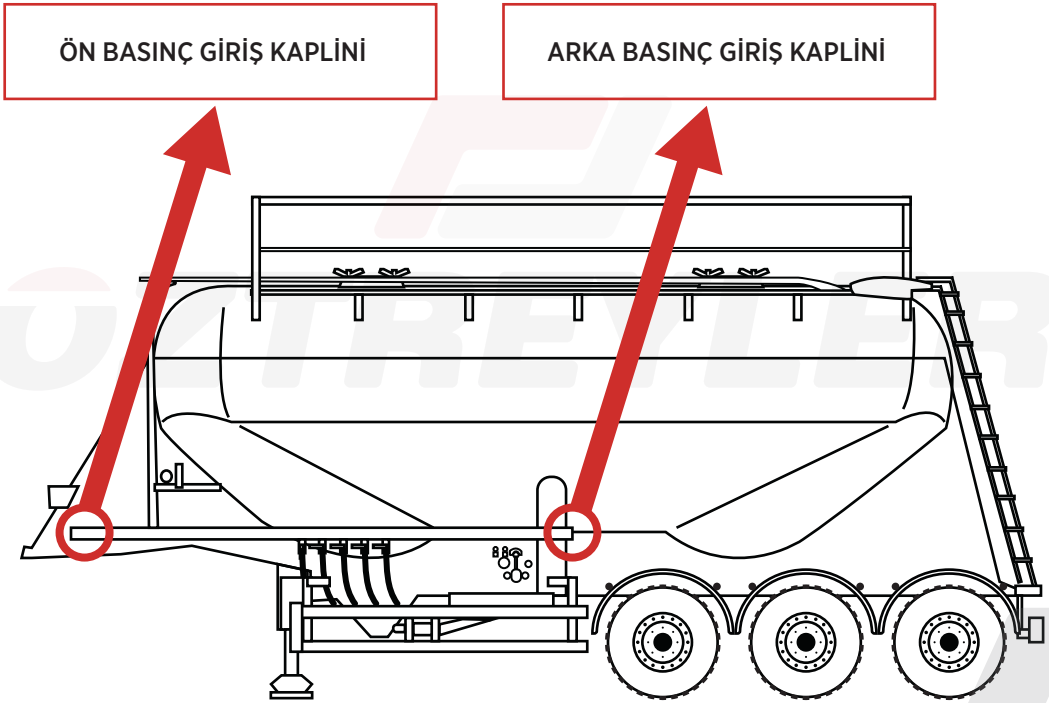


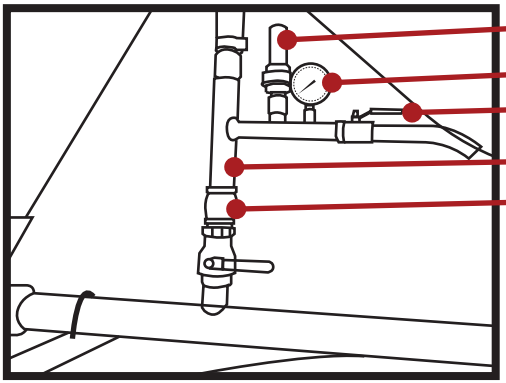
BOŞALTMA İŞLEMİ PRENSİPLERİ

- BOŞALTMA İŞLEMİNE BAŞLANMADAN ÖNCE ARACIN DÜZGÜN VE EMNİYETLİ BİR KONUDA VE DURUMDA OLDUĞU KONTROL EDİLMELİ VE SAĞLANMALIDIR.
- ARACIN PARK FRENİNİN AKTİF HALDE OLDUĞU KONTROL EDİLEMELİ VE SAĞLANMALIDIR.
- PİNCH VANALARA AİT KUMANDA VALFLERİNİN ÇEKİLMİŞ (AÇIK – On) POZİSYONDA OLDUĞU KONTROL EDİLİR.
- ARACIN BOŞALTMA ÇIKIŞINDAN BOŞALTMA İŞLEMİ YAPILACAK STOK SİLOSUNA OLAN HORTUM BAĞLANTISI YAPILIR.

a. TESİS BASINÇ KAYNAĞI KULLANILACAK İSE:

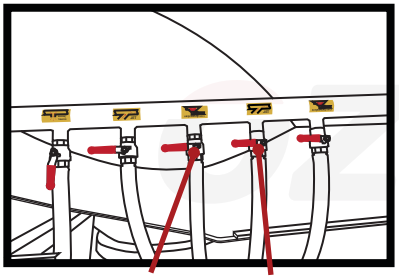
- ARACIN SAĞ YANINDAKİ BASINÇ HATTININ ÖN VE ARKA KISMINDA BULUNAN KAPLİNLERDEN UYGUN OLANA TESİS HAVA HATTI KAPLİNİ BAĞLANIR.





BASINÇLI HAVAYI SİLO YARI RÖMORKA VERMEDEN ÖNCE AŞAĞIDAKI KONTROL YAPILMALIDIR.

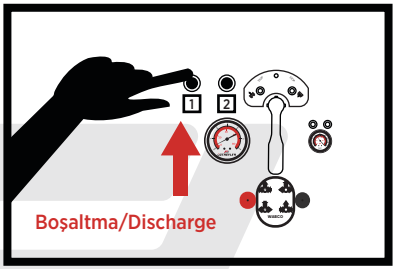
A. MANOMETRELERDEKİ BASINCIN 0 (SIFIR) OLDUĞU.
B. MENHOL KAPAKLARININ KAPALI VE SIZDIRMAZ OLDUĞU
C. ÜST HAVA TAHLİYE VALFİNİN KAPALI OLDUĞU
D. ALT HAVA TAHLİYE VALFİNİN KAPALI OLDUĞU
E. PINCH VANALARININ KAPALI OLDUĞU



TESİS BASINÇLI HAVASI SİSTEME VERİLİRKEN TANK BASINÇ HATTI VANASI AÇILIR VE TANK İÇİNE BASINÇLI HAVA DOLMASI SAĞLANIR.

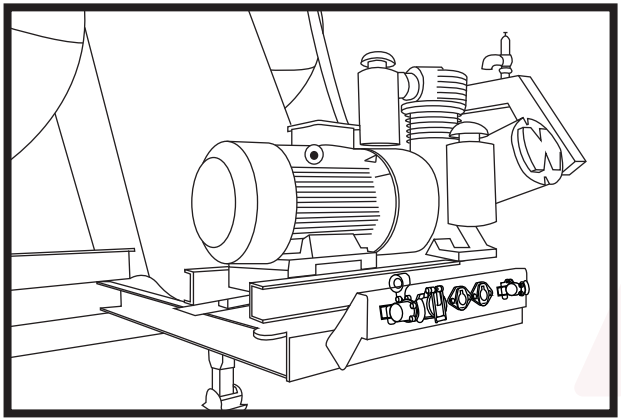
BOŞALTMA İŞLEMİNE MANOMETREDE ~2BAR BASINÇ GÖRÜLDÜĞÜNDE BAŞLANMALIDIR.

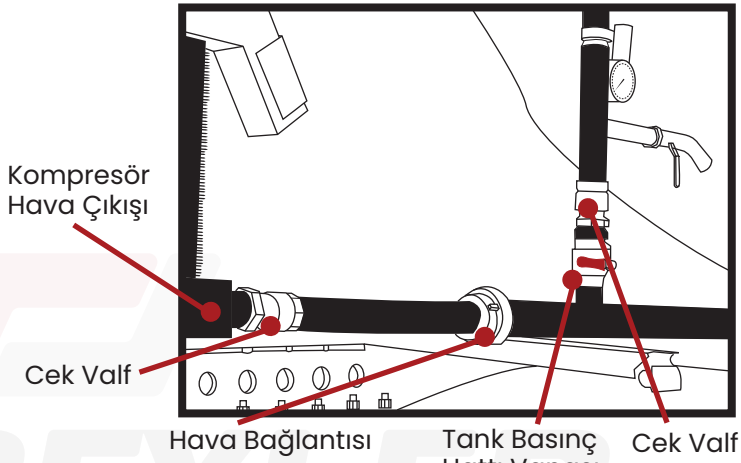
BASINÇ 1,5BAR OLDUĞUNDA HUNİ ALTLARINDAKI AKIŞKANLAŞTIRICILARA GİDEN HAVA VANALARI BİRAZ (%50) AÇILARAK NAKLİYE SIRASINDA DURUMA GÖRE TAM AÇILABİLİR.



2BAR SEVİYELERİNE ULAŞINCA HANGİ BÖLME BOŞALTILACAK İSE O BÖLMEYE AİT HIZLANDIRICI (JET) HATTI VANASI %50 AÇILIR VE O BÖLMEYE AİT PINCH VANANIN KUMANDASI İTTİRİLEREK PINCH VANANIN AÇILMASI SAĞLANIR.

b. ARAÇ ÜZERİNDEKİ ELEKTRİKLİ KOMPRESÖR KULLANILACAK İSE:



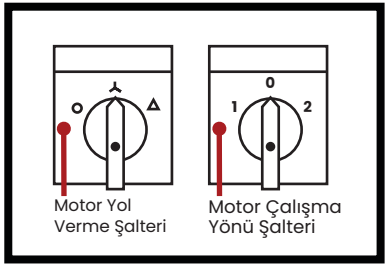


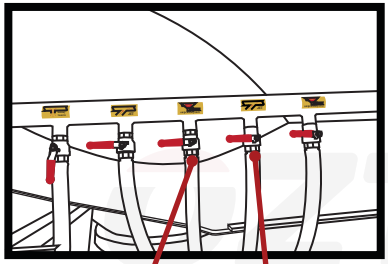
ARACIN ÖN KISMINDAKİ SEHPANIN ÜZERİNE MONTAJI YAPILAN ELEKTRİKLİ KOMPRESÖR SAĞ YANINDAKİ BASINÇ HATTININ ÖN KISMINDA BULUNAN KAPLİN İLE SİSTEME BAĞLANMIŞTIR.

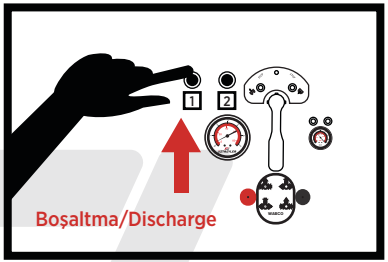
ELEKTRİKLİ KOMPRESÖRÜN ŞEBEKE BAĞLANTI FİŞİ ARACIN ARKA KISMINDA BULUNAN DOLAP İÇİNDEDİR. DOLAP İÇİNDEN ALINIP BOŞALTMA TESİSİNDEKİ İLGİLİ ELEKTRİK PRİZİNE MONTAJI YAPILMALIDIR.

DIKKAT!! KULLANILAN ELEKTRİK MOTORLARI **380V TRI FAZ** ELEKTRİK BAĞLANTISI İLE ÇALIŞTIRILMALIDIR.
DIKKAT!! BAĞLANAN FİŞ VE PRİZDE MUTLAKA **TOPRAKLAMA** OLMALIDIR.
DIKKAT!! TOPRAKLAMA OLMAYAN ELEKTRİK FİŞİNİ **KULLANMAYIN**.

ELEKTRİKLİ KOMPRESÖRÜN ÇALIŞTIRILMASI:



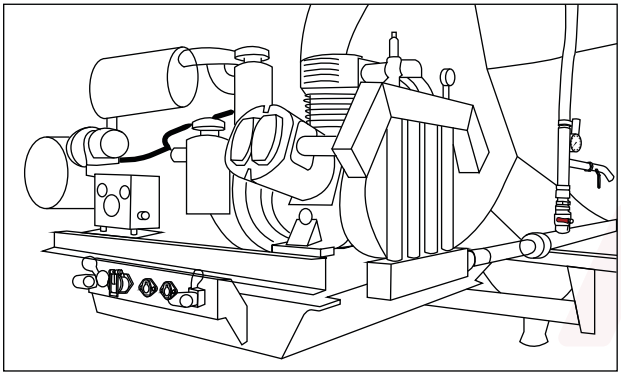


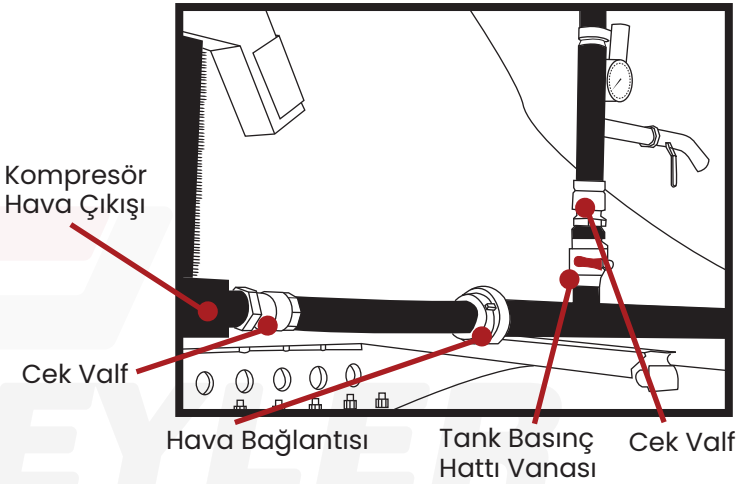


- ELEKTRİK MONTAJDAN ÖNCE KOMPRESÖRE AİT PANO KONTROL EDİLMELİ VE HER İKİ ŞALTER DE 0 (SIFIR) KONUMUNDA OLMALIDIR.
- TESİSE ELEKTRİKLİ BAĞLANTISI YAPILDIKTAN SONRA ÖNCE MOTOR YOL VERME ŞALTERİ YILDIZ POZİSYONUNA GETİRİLİR. MOTOR ÇALIŞMA YÖNÜ ŞALTERİ DE 1 (BIR) POZİSYONUNA ALINIR.
- EĞER KOMPRESÖR ÇALIŞMASI TERS İSE MOTOR ÇALIŞMA YÖNÜ ŞALTERİ 0 (SIFIR) POZİSYONUNA GETİRİLİR VE MOTORUN DURMASI BEKLENİR.
- MOTOR ÇALIŞMA YÖNÜ ŞALTERİ 2 (İKİ) POZİSYONUNA GETİRİLEREK NORMAL ÇALIŞMA YÖNÜ SAĞLANMIŞ OLUR.
- DİĞER TESİSLERDE TAM TERSİ OLABİLİR.
- DOĞRU YÖNDE ÇALIŞMASI SAĞLANMIŞ OLAN KOMPRESÖR MOTOR YOL VERME ŞALTERİNİN ÜÇGEN'E GETİRİLMESİYLE TAM GÜÇ ÇALIŞTIRILMALIDIR.
- KOMPRESÖRDEN BASINÇLI HAVA SİSTEME VERİLİRKEN, TANK BASINÇ HATTI VANASI AÇILIR VE TANK İÇİNE BASINÇLI HAVA DOLMASI SAĞLANIR.
- BOŞALTMA İŞLEMİNE MANOMETREDE ~2BAR BASINÇ GÖRÜLDÜĞÜNDE BAŞLANMALIDIR.
- BASINÇ 1,5BAR OLDUĞUNDA HUNİ ALTLARINDAKİ AKIŞKANLAŞTIRICILARA GİDEN HAVA VANALARI BİRAZ (%50) AÇILARAK NAKLİYE SIRASINDA HUNİ TABANINA OTURMUŞ OLAN MALZEMENİN HAREKETLENMESİ VE GEVŞEMESİ ŞAĞLANIR. BOŞALTMA SIRASINDA DURUMA GÖRE TAM AÇILABİLİR.
- 2BAR SEVİYELERİNE ULAŞINCA HANGİ BÖLME BOŞALTILACAK İSE O BÖLMEYE AİT HIZLANDIRICI (JET) HATTI VANASI %50 AÇILIR VE O BÖLMEYE AİT PİNCH VANANIN KUMANDASI İTTİRİLEREK PİNCH VANANIN AÇILMASI SAĞLANIR.

c. ARAÇ ÜZERİNDEKİ DİZEL MOTORLU KOMPRESÖR KULLANILACAK İSE:

- ARACIN ÖN KISMINDAKİ SEHPANIN ÜZERİNE MONTAJI YAPILAN DİZEL MOTORLU KOMPRESÖR SAĞ YANINDAKİ BASINÇ HATTININ ÖN KISMINDA BULUNAN KAPLİN İLE SİSTEME BAĞLANMIŞTIR.

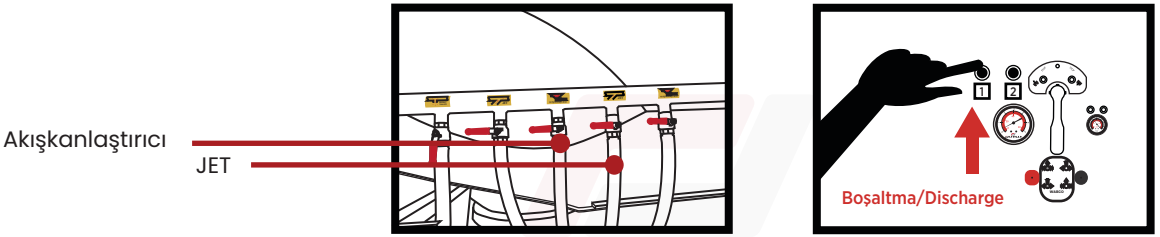




- ARACIN ÖN KISMINDAKİ SEHPANIN ÜZERİNE MONTAJI YAPILAN DİZEL MOTORLU KOMPRESÖR SAĞ YANINDAKİ BASINÇ HATTININ ÖN KISMINDA BULUNAN KAPLİN İLE SİSTEME BAĞLANMIŞTIR.

- DİZEL MOTORLU KOMPRESÖRÜ ÇALIŞTIRMADAN ÖNCE MAZOT TANKINDA YETERİ KADAR MAZOT OLDUĞU KONTROL EDİLMELİDİR.
- DİZEL MOTORUN BAKIMLARININ YAPILMASI KULLANICI MESULİYETİNDEDİR. BAKIMLARI YAPILDIĞI VE ÇALIŞIR DURUMDA OLAN DİZEL MOTORLU KOMPRESÖRÜN MOTORU ÇALIŞTIRILMADAN ÖNCE TANK BASINÇ HATTI VANASI AÇILIR VE DİĞER TÜM VANALAR KAPALI POZİSYONA GETİRİLİR.
- KOMPRESÖRDEN BASINÇLI HAVA SİSTEME VERİLİRKEN, TANK BASINÇ HATTI VANASI AÇILIR VE TANK İÇİNE BASINÇLI HAVA DOLMASI SAĞLANIR.

- BOŞALTMA İŞLEMİNE MANOMETREDE ~2bar BASINÇ GÖRÜLDÜĞÜNDE BAŞLANMALIDIR.
- BASINÇ 1,5bar OLDUĞUNDA HUNİ ALTLARINDAKİ AKIŞKANLAŞTIRICILARA GİDEN HAVA VANALARI BİRAZ (%50) AÇILARAK NAKLİYE SIRASINDA HUNİ TABANINA OTURMUŞ OLAN MALZEMENİN HAREKETLENMESİ VE GEVŞEMESİ ŞAĞLANIR. BOŞALTMA SIRASINDA DURUMA GÖRE TAM AÇILABİLİR.
- 2bar SEVİYELERİNE ULAŞINCA HANGİ BÖLME BOŞALTILACAK İSE O BÖLMEYE AİT HIZLANDIRICI (JET) HATTI VANASI %50 AÇILIR VE O BÖLMEYE AİT PİNCH VANANIN KUMANDASI İTTİRİLEREK PİNCH VANANIN AÇILMASI SAĞLANIR.



BOŞALTMA İŞLEMİ BÖLME DEĞİŞİMLERİ:

- BOŞALTILAN BÖLMEDE MALZEME BİTMEYE BAŞLADIĞINDA GÖVDE BASINCI DÜŞMEYE BAŞLAR.
- ÖNCE DİĞER BÖLMENİN PİNCH VANASI AÇILIR ve DAHA SONRA HIZLANDIRICI (JET) VANASI %50 AÇILIR.
- BİTEN BÖLMENİN PİNCH VANASI KAPATILIR.
- ARAÇ KAÇ BÖLMELİYSE HER BİR BÖLME TEK TEK YUKARIDAKİ İŞLEMLER DAHİLİNDE BOŞALTILIR.
- SON BÖLME DE BİTTİKTEN SONRA TÜM PİNCH VANALAR KAPATILIR VE GÖVDE BASINCININ 2bar OLMASI SAĞLANIR.
- TEK TEK TÜM BÖLMELERİN PİNCH VANALARI SIRASI İLE AÇILIR VE DİĞERİ KAPATILARAK SON KALAN MALZEMELERİN DE BOŞALTILMASI SAĞLANIR.
- EĞER HUNİLERDE VİBRASYON SİSTEMİ VARSA SON BOŞALTMA YAPILMADAN ÖNCE BİRKAÇ DAKİKA VİBRASYON SİSTEMİ ÇALIŞTIRILMALI VE MALZEMENİN HUNİ TABANINA AKMASI SAĞLANMALIDIR.
- TÜM PİNCH VANALAR AÇIK HALDE KALAN MALZEMENİN DE BOŞALMASI SAĞLANIR.

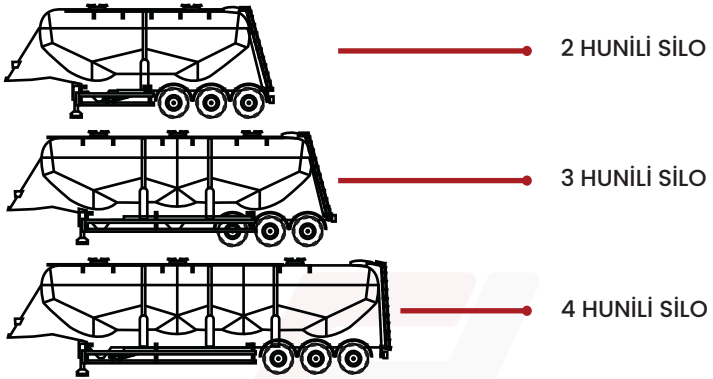
BOŞALTMA İŞLEMİ SONRASI YAPILACAK İŞLEMLER:

- İLK ÖNCE SİSTEME BASINÇLI HAVA SAĞLAYAN KAYNAK DEVRE DIŞI BIRAKILIR.
- KOLLEKTÖR HATTINDAKİ BASINÇ, BASINÇ TAHLİYE VALFİ İLE TAHLİYE EDİLİR.
- MANOMETRE ÜZERİNDE 0 (Sıfır) bar GÖRÜLMELİDİR.
- BASINÇLI HAVA KAYNAĞI TESİS İSE VANASI KAPATILIR ARDINDAN HAVA KOLLEKTÖR HATTI KAPLİNİ SÖKÜLEREK ARAÇTAN AYRILIR.
- BASINÇLI HAVA KAYNAĞI ELEKTRİKLİ KOMPRESÖR İSE ÖNCE MOTOR YOL VERME ŞALTERİ ÜÇGENDEN YILDIZA VE ARDINDAN O (Sıfır) POZİSYONUNA GETİRİLİR. MOTOR ÇALIŞMA YÖNÜ ŞALTERİ DE O (Sıfır) POZİSYONUNA ALINMALIDIR.
- BASINÇLI HAVA KAYNAĞI DİZEL MOTORLU KOMPRESÖR İSE VARSA STOP ÇUBUĞU ÇEKİLEREK VEYA KONTAKT (MARŞ) ANAHTARI KAPATILARAK MOTORUN STOP ETMESİ SAĞLANIR.
- ARACIN ARKA ÜST KISMINDAKİ BASINÇ TAHLİYE VANASI AÇILARAK TANK İÇİNDE KALMIŞ OLAN BASINÇLI HAVANIN DA TAHLİYE EDİLMESİ SAĞLANIR.
- TANK İÇİNDEKİ BASINCIN 0 (Sıfır) OLDUĞU GÖRÜLDÜKTEN SONRA BOŞALTMA HORTUMUNUN TESİS BAĞLANTISI SÖKÜLÜR.
- BOŞALTMA HORTUMU AÇIKTA TAŞINIYORSA ARACIN YANINDAKİ YERLERE YERLEŞTİRİLİR ve AÇIK OLAN KISMI KÖR FLANŞ İLE KAPATILIR.
- BOŞALTMA HORTUMU HORTUM TAŞIMA BORUSU İLE TAŞINIYORSA ARACIN ARKASINDAKİ FLAŞTAN veya KAPLİNDEN SÖKÜLEREK HORTUM TAŞIMA BORUSUNA KONUR VE KAPAĞI KAPATILIR.
- ARACIN ÜZERİNE ÇIKILARAK MENHOL KAPAĞI AÇILIR VE MALZEMENİN TAMAMEN BOŞALDIĞI GÖRÜLÜR.
- ELEKTRİKLİ KOMPRESÖR KULLANILDIYSA KABLOSU TOPLANIR VE ARAÇ ARKASINDAKİ DOLABA KONUR.

ÖNEMLİ : BOŞALTMA SONRASI YOLA ÇIKMADAN ÜSTTEKİ MENHOL KAPAKLARININ **KAPALI** OLDUĞU **KONTROL EDİLMELİDİR.**

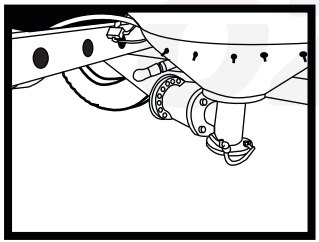
ÖNEMLİ : AÇIK MENHOL KAPAKLARINDAN YAĞMUR VEYA BAŞKA SEBEPLERDEN DOLAYI SU GİRMESİ HUNİ DİPLERİNDE **ISLANMA VE TIKANMALARA SEBEP OLACAKTIR.**

W TİP SİLO GÖVDE TİPLERİ

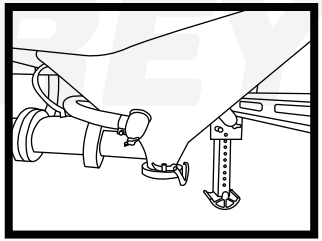


BOŞALTMA HUNİ TİPLERİ

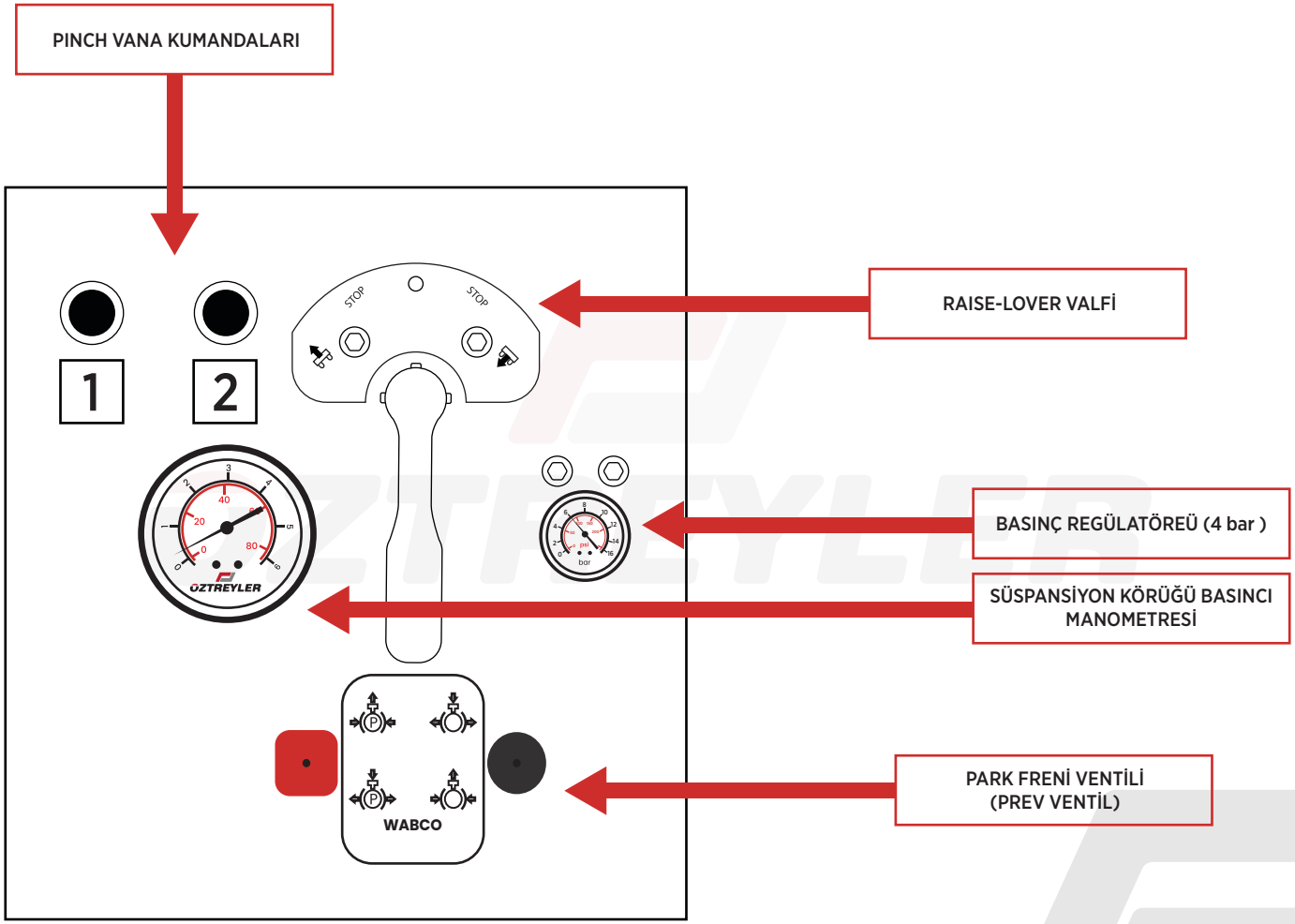
1. BEZLİ TİP



2. AERATÖRLÜ TİP



ÖNEMLİ : PİNCH VANALAR İÇİN BASINÇ REGÜLATÖR ÜRÜNLERDE BASINÇ REGÜLETÖRÜ AYARI İLE **OYNAMAYINIZ.**
GEREKLİ HALLERDE DEĞİŞİKLİKTEN SONRA **4 BAR** OLARAK AYARLAYINIZ.


PINCH VANA KUMANDALARI
1
2
STOP
STOP
RAISE-LOVER VALFİ
BASINÇ REGÜLATÖREÜ (4 bar)
SÜSPANSİYON KÖRÜĞÜ BASINCI MANOMETRESİ
PARK FRENİ VENTİLİ (PREV VENTİL)
ÖZTREYLER
WABCO

BAKIM TAKVİMİ

1. HER GÜN, BÜTÜN BAĞLANTI CİVATALARINI VE MONTAJ BAĞLANTILARINI KONTROL EDİN.
2. HER GÜN, GÖZ İLE TANKIN YÜZEYİNDE DEFORMASYON OLUP OLMADIĞINI KONTROL EDİNİZ.
3. HER GÜN, TESİSATTA SIZINTI VE KAÇAK OLMADIĞINI KONTROL EDİNİZ.
4. HER BOŞALTMADA EMNİYET VENTİLİNİN 2,1~2,2 bar DA AÇTIĞI KONTROL EDİLMELİDİR.
5. BİR SORUNLA KARŞILAŞILINCA DERHAL İLGİLİ SERVİSE HABER VERİNİZ.



****** TÜM ARAÇLARDA 2 ADET BASINÇ TAHLİYE VALFİ VARDIR.**

MUHTEMEL ARIZALAR

*** DOLUM İŞLEMİ İÇİN DOLUM TESİSİ ŞARTNAMELERİNE UYULMALIDIR.

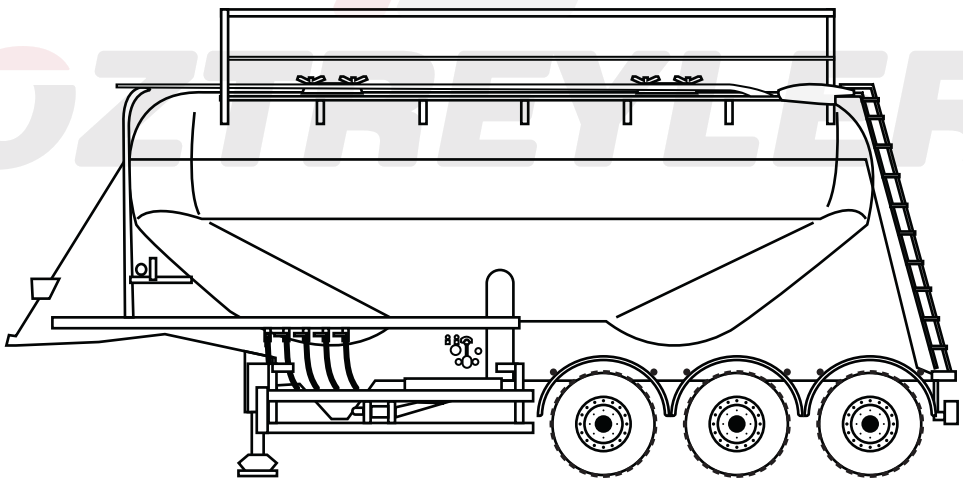
*** BOŞALTMA İŞLEMİ İÇİN TESİS ŞARTNAMELERİNE UYULMALIDIR.

A- TESİS BASINÇLI HAVA KAYNAKLI SİSTEM		
Basınç Yükselmiyor	Manometre kontrol edilmeli	Manometre arızalı ise Manometre değiştirilmeli
	Basınç Tahliye Vanaları kontrol edilmeli	Vanalar kapatılmalı
	Kollektör hattındaki vanalar kontrol edilmeli	Özellikle JET hattı vanaları kapatılmalıdır
	Tesisten gelen hava kontrol edilmeli	Hava gelmiyor ise Tesis yetkilisi ile görüşülmeli
	Pinch Vanalar Kontrol edilmeli	Açık ise kapatılmalı
Malzeme Vermiyor	Pinch Vanalar Kontrol edilmeli	Kapalı ise AÇILMALI
	Basınç Kontrol edilmeli	Tank Basıncı düşmüş ise tamamlanmalıdır
	JET hattı vanaları kontrol edilmeli	Kapalı ise Açılmalı

**** TÜM ARIZALARDA ÖZTREYLER İLE İRTİBATA GEÇİNİZ !

SILO

USER MANUAL



CONTENTS

DESCRIPTION OF SYSTEM

Silo semi-trailer is a complete equipment made of aluminum, steel or stainless steel , which has single or multiple cone body together with filling and discarge equipments, designed for carrying bulk loads like cement, ash, silica sand, flour or lime.

ECONOMIC LIFE OF THE EQUIPMENT IS 10 (TEN) YEARS. (ACCORDING TO EU REGULATIONS)

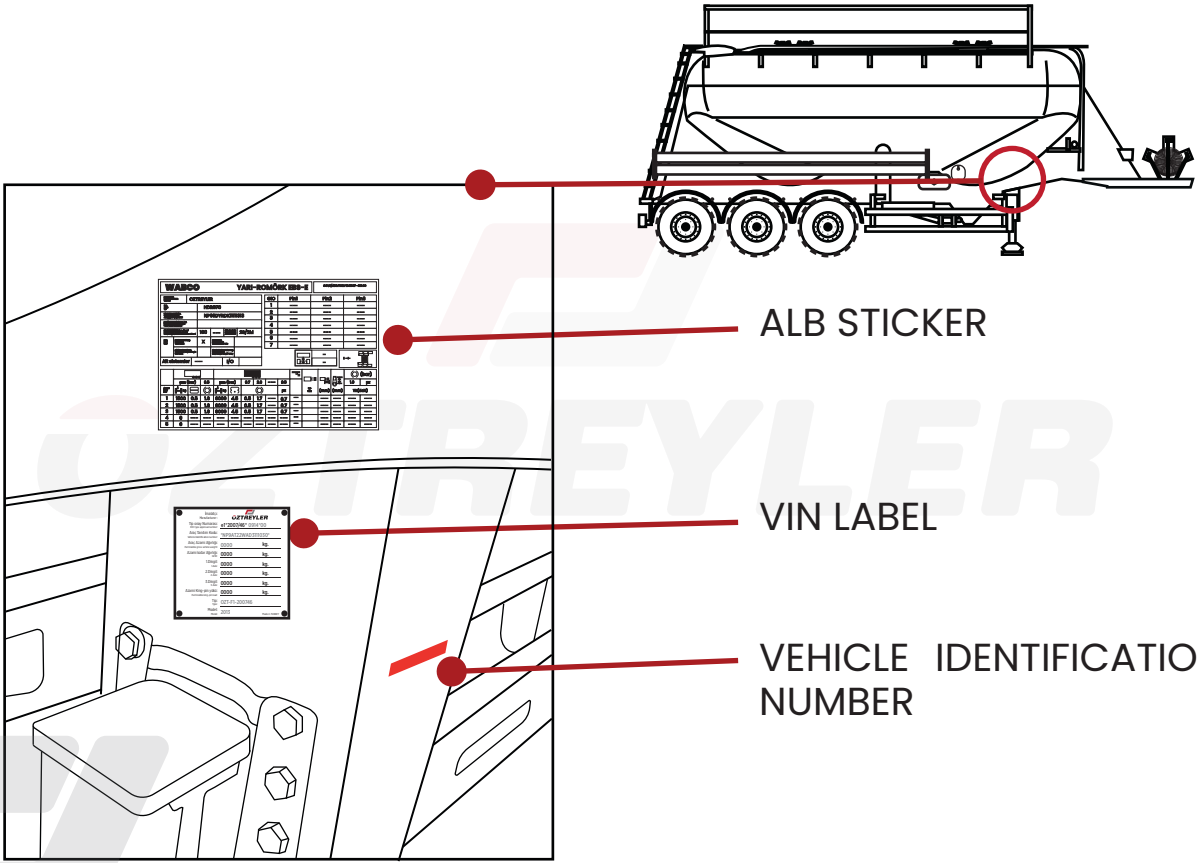
Model	Description	Where to Use
SAWT	Silo is completely made of aluminum or stainless steel and has multiple cones in W type design.	Highly secure, modern, lighter but more expensive.
SYWT	Silo is completely made of carbon steel and has multiple cones with W type design.	Highly secure, modern. Heavier compared to SYWT but lighter and more expensive compared to SYVT.
SYVT	Silo is completely made of carbon steel and has single cone in V type design.	This equipment still continues to be relevant for bulk loads. It is being prefereed in many countries.

CHECKS TO BE EXECUTED AND STARTING OF THE SYTEM

TO DISCHARGE THE LOADED SILO, PLACE THE SEMI-TRAILER ON A FLAT AND SOLID SURFACE. SET THE PARKING BRAKE TO PREVENT MOVE OF THE SEMI-TRAILER. FIRSTLY, CONNECT THE DISCHARGE PIPE BETWEEN DISCHARGE POINT OF THE SILO SEMI-TRAILER AND DISCHARGE PLACE.

IMPORTANT: BEFORE FILLING AND DISCHARGE, CHECK SYSTEM PRESSURE AND MAKE SURE THAT PRESSURE LEVEL IS 0 bar (Zero).

IDENTIFICATION AND TRACKING NUMBER OF THE SEMI-TRAILER

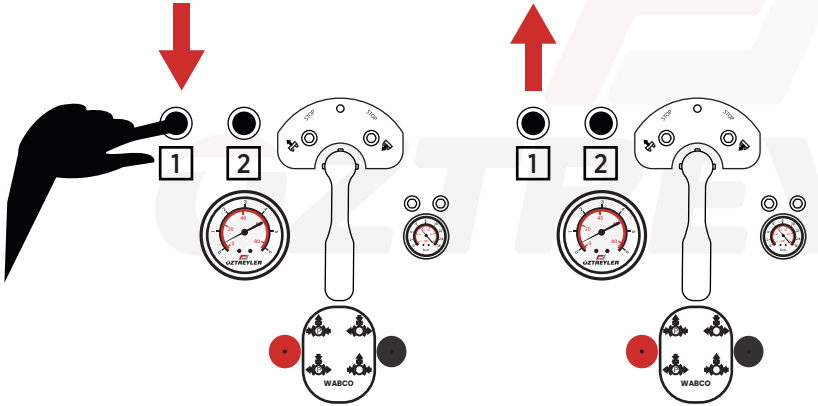


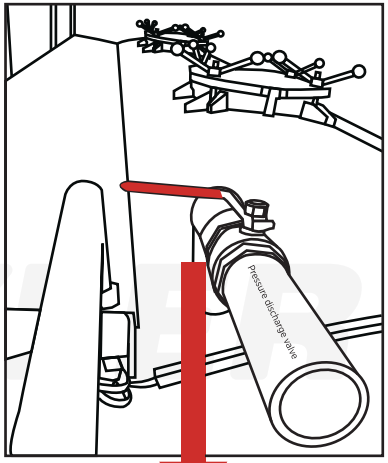
PRINCIPLES OF FILLING PROCESS

PLEASE RESPECT REGULATIONS OF FILLING STATIONS FOR FILLING PROCESS.

BEFORE STARTING FILLING, PLEASE MAKE SURE THAT PINCH VALVES UNDER THE CONES ARE IN OFF POSITION. IF NOT, PLEASE TURN OFF THE VALVES.

Before starting filling, pull the pinch valve toward yourself and turn off the pinch valve.
Push the valve number 1 for discharge process.
During discharge, pull vibration appliance control valve towards yourself.

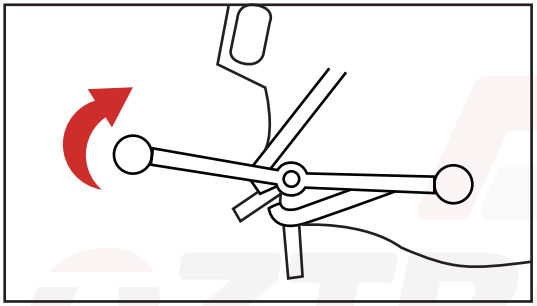




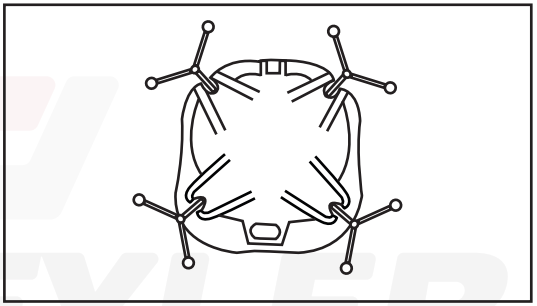
Before opening manhole cover, turn the discharge valve on in case there is pressure air in the tank.

MANHOLE COVER SHOULD BE OPENED AS INDICATED BELOW AND SHOULD BE PLACED UNDER THE FILLING CONE IN THE FILLING STATION.

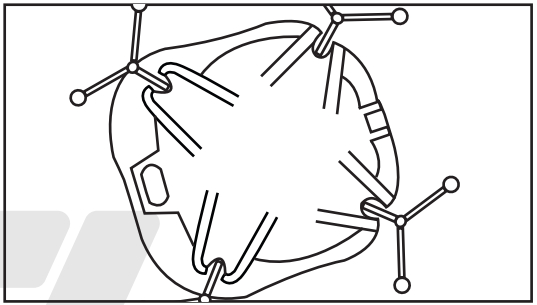
Remove the stud bolts around the cover only by hand force (manually).



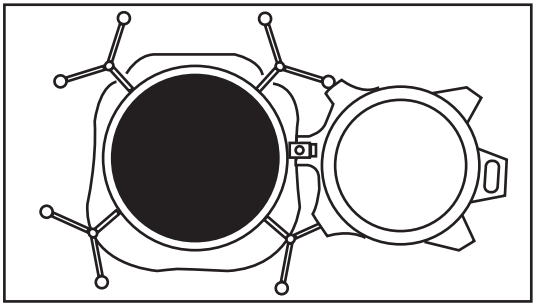
Leave the stud bolts in a position that does not prevent opening, as follows:



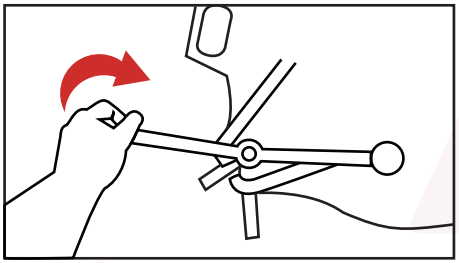
Hold the cover and open.



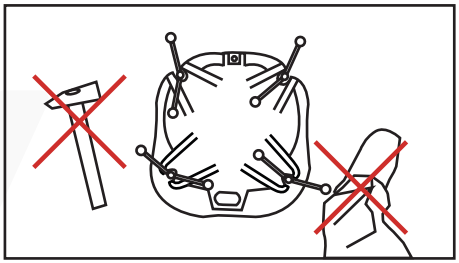
Opened manhole cover



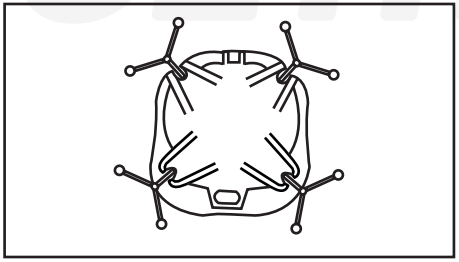
AFTER FILLING PROCESS ENDED, CLEAN THE REMAINS OF THE LOAD ON THE SURFACE. MAKE SURE THAT THE COVER SUBSIDED ON ALL SIDES AND MAKE SURE THAT ALL STUD BOLTS ARE TIGHTENED WELL (SEALED).



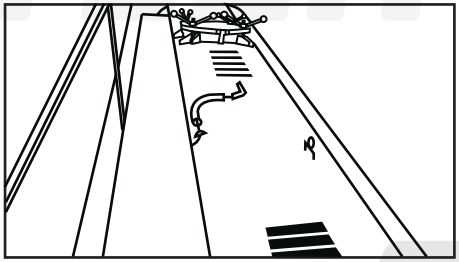
Tighten the stud bolts only by using your hand. When tightening, you should tighten opposite stud bolt, not near.



Do not use HAMMER or PIPE to open or close manhole cover. Do not KICK.

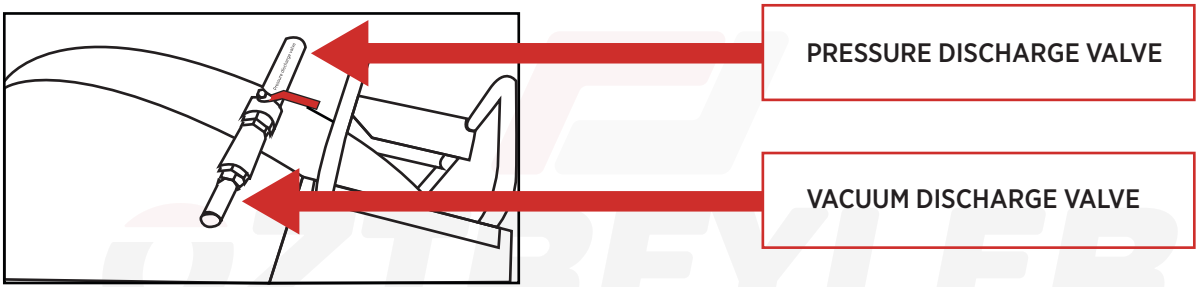


Closed and stud bolts are tightened well. (sealed)



After filling process, clean the top of the tank with air gun and prevent flitting of material during transportation.

- AFTER FILLING PROCESS ENDED AND TOP OF THE TANK IS CLEANED, YOU SHOULD GO DOWNSTAIRS AND CLOSE THE GUARDS.
- DURING TRANSPORTATION, IN ORDER TO PREVENT VACUUM AS A RESULT OF AIR CONDITIONS, LEAVE THE TOP DISCHARGE VALVE AJAR OPEN. (IF THERE IS VACUUM SECURITY VALVE ON THE PRESSURE DISCHARGE VALVE, THIS IS NOT NECESSARY.)

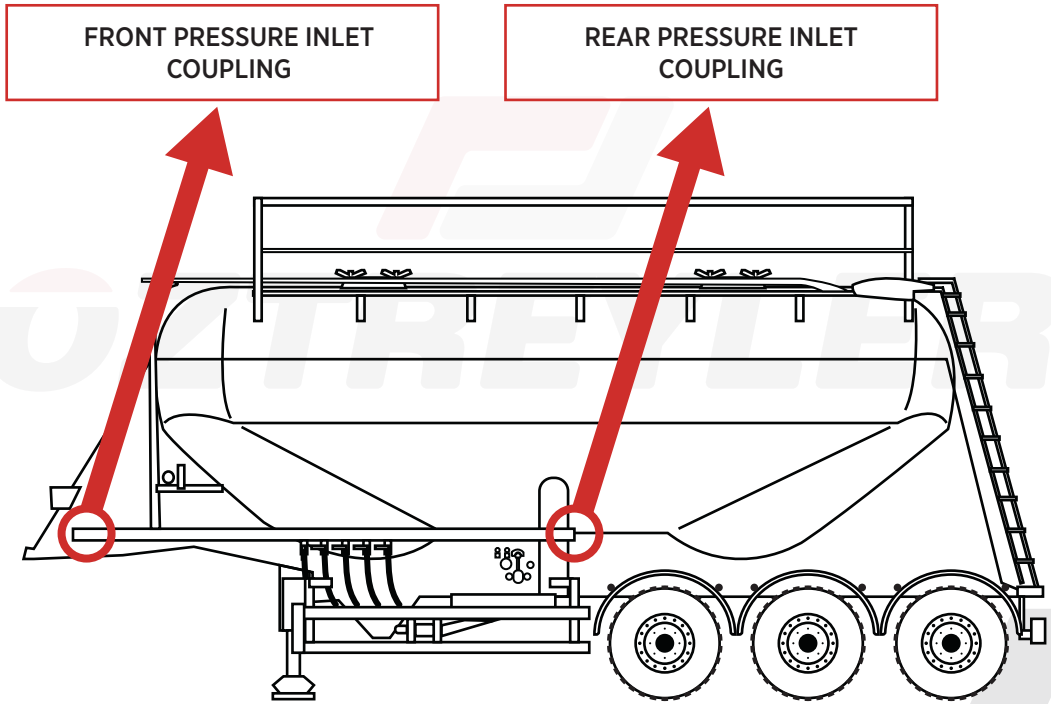


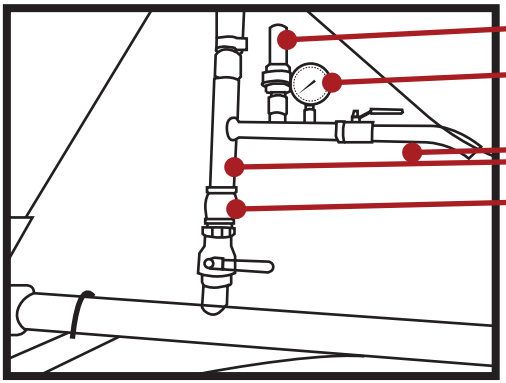
PRINCIPLES OF DISCHARGE PROCESS

- BEFORE STARTING DISCHARGE PROCESS, PLEASE MAKE SURE THAT THE SEMI-TRAILER IS IN A SECURE POSITION AND LOCATED ON A FLAT AND SOLID SURFACE. IF NOT, PLEASE ENSURE THESE CONDITIONS.
- PARK BRAKE VALVE SHOULD BE SET. IF NOT, MAKE SURE THAT PARKING BRAKE IS SET.
- IT SHOULD BE CHECKED THAT CONTROL VALVES OF PINCH VALVES SHOULD BE TURNED ON. (POSITION ON)
- DISCHARGE PIPE SHOULD BE CONNECTED BETWEEN DISCHARGE OUTLET OF THE TANK AND STOCK SILO.

a. IF PRESSURE SOURCE ON SITE WILL BE USED:

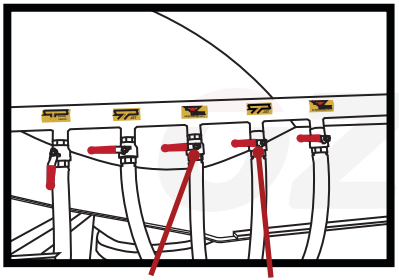
- COUPLING OF THE AIR LINE ON SITE SHOULD BE CONNECTED TO THE CONVENIENT COUPLING ON THE REAR OR FRONT SIDE OF THE PRESSURE LINE ON THE RIGHT SIDE OF THE SEMI-TRAILER.





BEFORE APPLYING PRESSURE AIR TO THE SILO TANK, PLEASE CHECK BELOW POINTS:

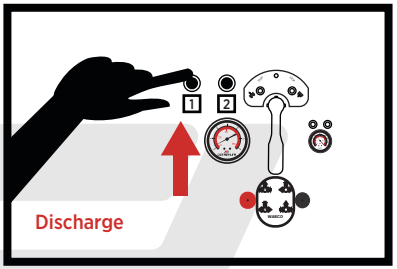
A. PRESSURE LEVEL ON THE MANOMETERS ARE 0 (ZERO)
B. MANHOLE COVERS ARE TIGHTLY CLOSED AND SEALED
C. AIR DISCHARGE VALVE ON THE TOP IS TURNED OFF
D. AIR DISCHARGE VALVE AT THE BOTTOM IS TURNED OFF
E. PINCH VALVES ARE TURNED OFF



WHEN AIR IS COMING FROM THE AIR LINE ON THE SITE, PRESSURE LINE VALVE SHOULD BE TURNED ON AND PRESSURE AIR STARTS PENETRATING INTO THE SILO TANK.

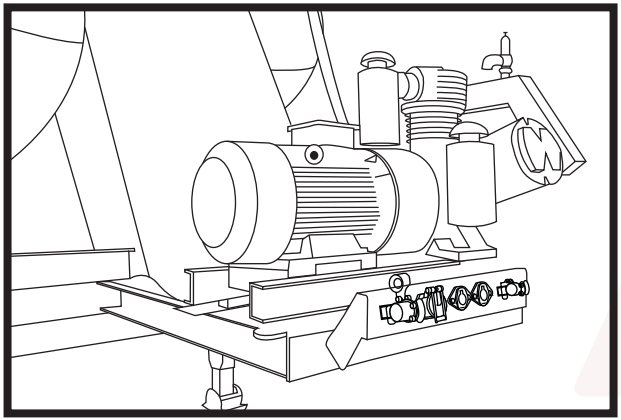
DISCHARGE PROCESS SHOULD START WHEN MANOMETERS INDICATE ~2BAR PRESSURE.

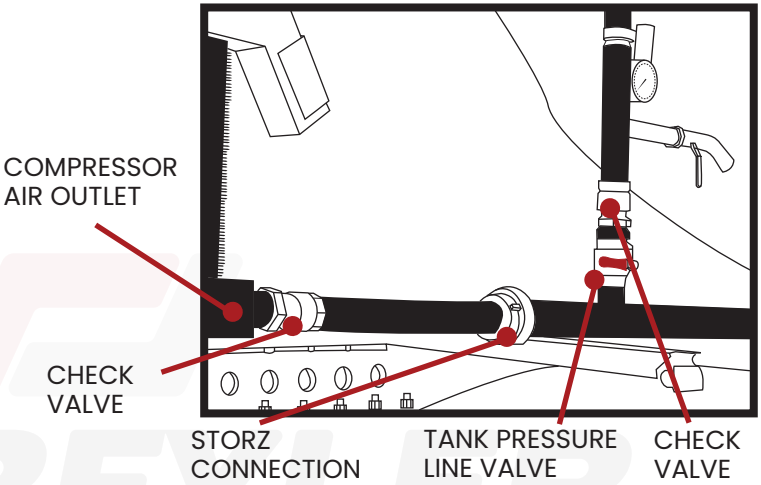
WHEN PRESSURE REACHES 1,5 BAR, AIR VALVES FOR AIR BAND DIAPERS (FLUIDIZER) SHOULD BE 50% TURNED ON IN ORDER TO SET THE MATERIAL AT THE BOTTOM OF THE CONES IN MOTION AND IN ORDER TO LOOSEN THEM. WHEN DISCHARGING, AIR VALVES CAN BE FULLY TURNED ON IF NECCESSARY.



WHEN PRESSURE REACHES 2BAR LEVEL, ACCELERATOR (JET) AIR LINE VALVE OF RELEVANT CONE IS 50% TURNED ON AND CONTROL VALVE OF THE RELEVANT PINCH VALVE IS PUSHED FOR TURNING ON.

b. IF ELECTRICAL COMPRESSOR ON THE SEMI-TRAILER WILL BE USED:



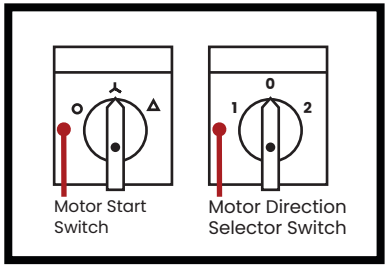


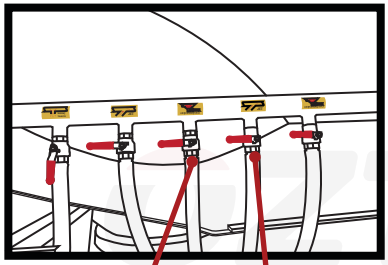
- ELECTRICAL COMPRESSOR, WHICH IS LOCATED ON THE FRONT SIDE OF THE SEMI-TRAILER, IS CONNECTED TO THE SYSTEM WITH THE COUPLING OF PRESSURE LINE ON THE FRONT-LEFT SIDE OF THE SEMI-TRAILER.

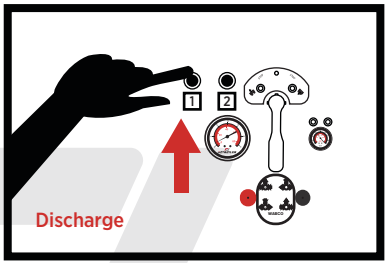
- PLUG OF ELECTRICAL COMPRESSOR IS LOCATED IN THE CABINET AT THE REAR SIDE OF THE SEMI-TRAILER. IT SHOULD BE PLUGGED IN THE RELEVANT SOCKET ON THE SITE.

IMPORTANT: ELECTRICAL ENGINES SHOULD BE USED WITH **380V THREE PHASE** CONNECTION.
IMPORTANT: SOCKET AND PLUG MUST HAVE GROUNDING.
IMPORTANT: DO NOT PLUG IN THE SOCKET WITHOUT GROUNDING.

STARTING ELECTRICAL COMPRESSOR:



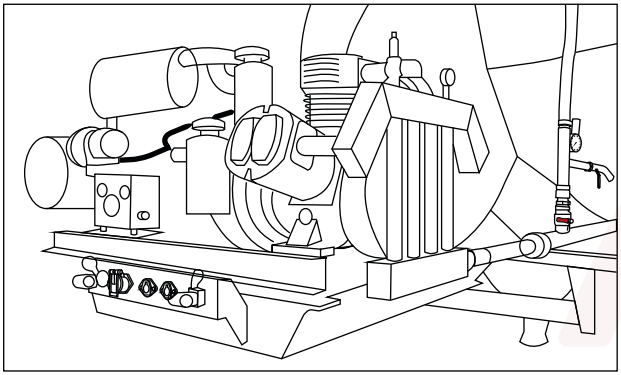


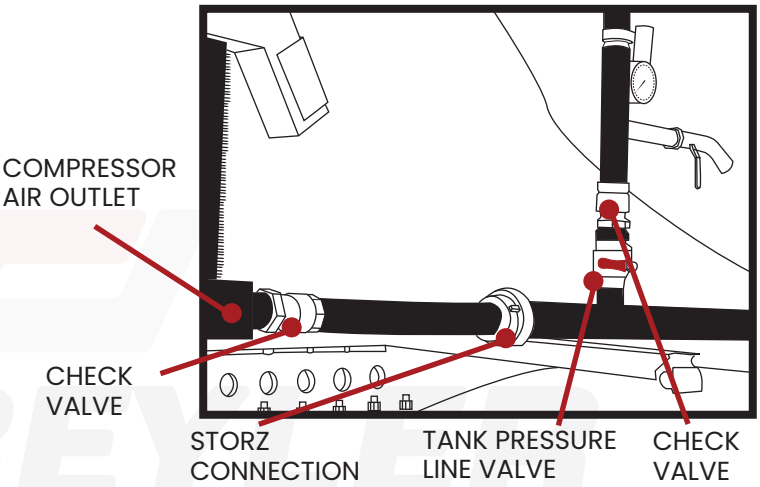


- CONTROL PANEL OF THE COMPRESSOR SHOULD BE CHECKED AND MAKE SURE THAT BOTH SWITCHES ARE ON 0 (ZERO) POSITION.
- AFTER ELECTRICAL CONNECTION WITH THE SITE IS ENSURED, STARTER SWITCH IS PUT ON THE STAR POSITON FIRST. THEN, ENGINE STARTER SWITCH IS PUT ON POSITION 1 (ONE).
- IF WORKING DIRECTION IS ENGINE IS REVERSE, ENGINE STARTER SWITCH IS PUT ON 0 (ZERO) POSITION AND ENGINE STOPS.
- ENGINE STARTER SWITCH IS PUT ON POSITION 2 (TWO) AND WORKING DIRECTION IS ENSURED.
- IN DIFFERENT SITES, REVERSE POSITIONS CAN BE USED.
- AFTER ENGINE IS STARTED IN THE RIGHT DIRECTION, ENGINE STARTER SWITCH IS PUT ON TRIANGLE POSITION AND ENGINE STARTS TO FUNCTION IN FULL POWER.
- WHEN AIR IS FLOWING FROM COMPRESSOR TO THE SYSTEM, TANK PRESSURE LINE VALVE IS TURNED ON AND AIR STARTS TO LOW INTO THE SILO TANK.
- DISCHARGE PROCESS SHOULD START WHEN PRESSURE LEVEL ON MANOMETERS REACH ~2BAR.
- WHEN PRESSURE REACHES 1,5 BAR, AIR VALVES FOR AIR BAND DIAPERS (FLUIDIZER) SHOULD BE 50% TURNED ON IN ORDER TO SET THE MATERIAL AT THE BOTTOM OF THE CONES IN MOTION AND IN ORDER TO LOOSEN THEM. WHEN DISCHARGING, AIR VALVES CAN BE FULLY TURNED ON IF NECCESSARY.
- WHEN PRESSURE REACHES 2BAR LEVEL, ACCELERATOR (JET) AIR LINE VALVE OF RELEVANT CONE IS 50% TURNED ON AND CONTROL VALVE OF THE RELEVANT PINCH VALVE IS PUSHED FOR TURNING ON.

c. IF DIESEL COMPRESSOR ON THE SEMI-TRAILER WILL BE USED:

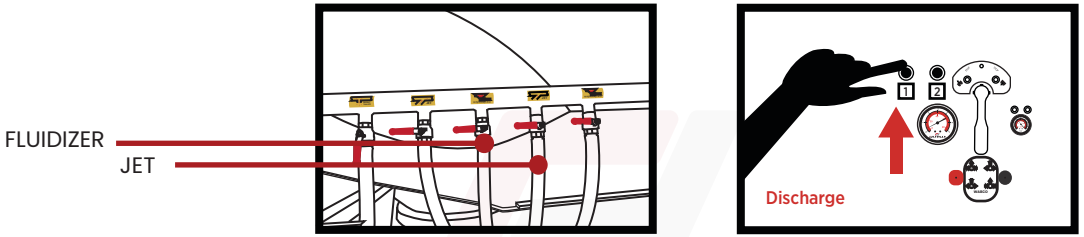
- DIESEL COMPRESSOR LOCATED ON STAND AT THE FRONT SIDE OF THE SEMI-TRAILER IS CONNECTED TO THE SYSTEM THROUGH THE COUPLING OF THE PRESSURE LINE LOCATED ON THE LEFT-FRONT SIDE OF THE SEMI-TRAILER.





- MAKE SURE THAT THERE IS ENOUGH DIESEL IN THE OIL TANK BEFORE STARTING THE COMPRESSOR WITH DIESEL ENGINE.
- MAINTENANCE OF DIESEL ENGINE IS RESPONSIBILITY OF THE USER. MAINTENANCE OF DIESEL ENGINE SHOULD BE MADE REGULARLY AND DIESEL ENGINE SHOULD BE KEPT FUNCTIONING.
- BEFORE STARTING THE ENGINE, TANK PRESSURE LINE VALVE SHOULD BE TURNED ON AND ALL OTHER VALVES ARE KEPT TURNED OFF.
- WHEN COMPRESSOR IS PUMPING PRESSURE AIR INTO THE SYSTEM, TANK PRESSURE LINE VALVE IS TURNED ON AND PRESSURE AIR STARTS TO FLOW INTO THE SILO TANK. SILO TANK SHOULD BE FILLED WITH PRESSURE AIR.

- DISCHARGE PROCESS SHOULD START WHEN PRESSURE LEVEL ON THE MANOMETER IS ~2bar.
- WHEN PRESSURE REACHES 1,5 bar, AIR VALVES FOR AIR BAND DIAPERS (FLUIDIZER) SHOULD BE 50% TURNED ON IN ORDER TO SET THE MATERIAL AT THE BOTTOM OF THE CONES IN MOTION AND IN ORDER TO LOOSEN THEM. WHEN DISCHARGING, AIR VALVES CAN BE FULLY TURNED ON IF NECCESSARY.
- WHEN PRESSURE REACHES 2bar LEVEL, ACCELERATOR (JET) AIR LINE VALVE OF RELEVANT CONE IS 50% TURNED ON AND CONTROL VALVE OF THE RELEVANT PINCH VALVE IS PUSHED FOR TURNING ON.



CHANGING CONES DURING DISCHARGE PROCESS:

- WHEN MATERIAL IS RUNNING OUT IN THE CONE BEING DISCHARGED, PRESSURE LEVEL OF THE TANK BODY STARTS TO DECREASE.
- FIRST, PINCH VALVE OF THE OTHER COMPARTMENT IS TURNED ON AND THEN ACCELERATOR (JET) VALVE IS TURNED ON 50%.
- PINCH VALVE OF THE CONE -WHERE DISCHARGE PROCESS IS FINISHED- IS TURNED OFF.
- EACH CONE IS DISCHARGED BY REPEATING ABOVE INSTRUCTIONS.
- WHEN THE LAST CONE IS DISCHARGED, ALL PINCH VALVES ARE TURNED OFF AND PRESSURE LEVEL OF THE TANK BODY IS ENSURED AS 2bar.
- PINCH VALVES OF ALL CONES ARE TURNED ON RESPECTIVELY AND OTHER PINCH VALVES ARE TURNED OFF IN ORDER TO DISCHARGE ALL MATERIAL INSIDE (IF ANY LEFT).
- IF CONES HAVE VIBRATION SYSTEM, VIBRATION SYSTEM SHOULD BE STARTED A FEW MINUTES BEFORE STARTING DISCHARGE PROCESS AND MATERIAL INSIDE SHOULD BE ALLOWED TO FLOW TO THE CONE BASE.
- ALL PINCH VALVES TURNED ON AND ALL MATERIAL INSIDE IS DISCHARGED.

PROCEDURES AFTER DISCHARGE PROCESS:

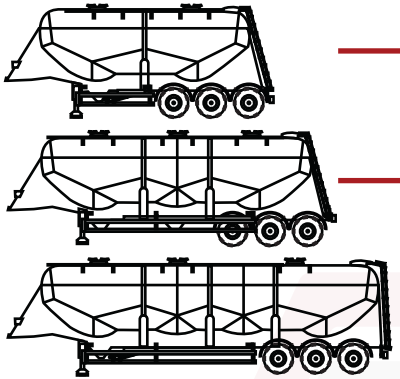
- FIRSTLY, THE SOURCE OF PRESSURE AIR IS DEACTIVATED.
- PRESSURE AIR LEFT IN THE TANK AND COLLECTOR LINE IS DISCHARGED BY TURNING ON THE PRESSURE DISCHARGE VALVES ON THE REAR-TOP SIDE OF THE TANK AND ON THE PRESSURE LINE.
- PRESSURE LEVEL ON THE MANOMETER SHOULD BE 0 (ZERO) BAR.
- BY STEPPING UP ON THE TANK, MANHOLE COVERS SHOULD BE OPENED. MAKE SURE THAT THE MATERIAL IS DISCHARGED COMPLETELY.
- IF THE SOURCE OF PRESSURE AIR IS ON SITE, ITS VALVE SHOULD BE TURNED OFF. THEN, COUPLING OF AIR COLLECTOR LINE IS DISCONNECTED.
- IF THE SOURCE OF PRESSURE AIR IS ELECTRICAL COMPRESSOR, ENGINE STARTER SWITCH IS PUT ON STAR POSITION AFTER TRIANGLE POSITION AND THEN PUT ON 0 (ZERO) POSITION. THE OTHER SWITCH (ENGINE DIRECTION SWITCH) IS PUT ON 0 (ZERO) POSITION, TOO.
- IF THE SOURCE OF PRESSURE AIR IS DIESEL COMPRESSOR, STOP STICK SHOULD BE PULLED OFF (IF ANY) OR STARTER SWITCH SHOULD BE TURNED OFF TO STOP THE ENGINE.
- AFTER CONFIRMED THAT THE PRESSURE IN THE SILO TANK IS 0 (ZERO), CONNECTION OF DISCHARGE PIPE TO THE SITE CONNECTION IS DISCONNECTED.
- IF DISCHARGE HOSE IS CARRIED WITHOUT A HOSE CARRIER, IT SHOULD BE PLACED ON ITS PLACE NEAR THE SEMI TRAILER AND ITS OPEN SIDE IS COVERED WITH A STOP FLANGE.
- IF DISCHARGE HOSE IS CARRIED WITH A HOSE CARRIER, DISCHARGE HOSE IS DISCONNECTED FROM THE COUPLING AT THE REAR SIDE OF THE SEMI-TRAILER, PLACED IN THE HOSE CARRIER. COVER OF HOSE CARRIER IS CLOSED AND LOCKED.
- IF ELECTRICAL COMPRESSOR IS USED, ITS CABLE IS ORGANIZED AND PLACED IN THE CABINET AT THE REAR SIDE OF THE SEMI-TRAILER.



IMPORTANT:AFTER DISCHARGE, BEFORE TAKING OFF, MAKE SURE THAT MANHOLE COVERS ON THE TOP OF THE TANK ARE CLOSED TIGHTLY.

IMPORTANT: IF MANHOLE COVERS LEFT OPEN, RAIN OR OTHER FACTORS CAN LET WATER GET INSIDE THE SILO TANK WHICH CAUSES THAT CONE BOTTOMS GET SOAKED AND GET OBSTRUCT.

BODY TYPES OF W TYPE SILO

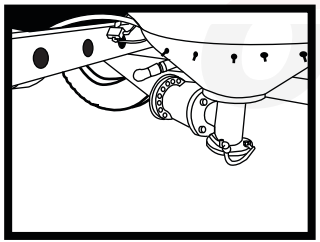


2 CONE SILO

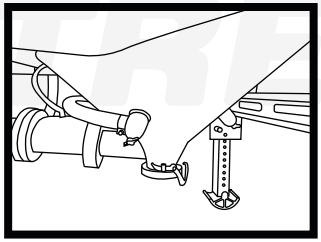
3 CONES SILO

4 CONES SILO

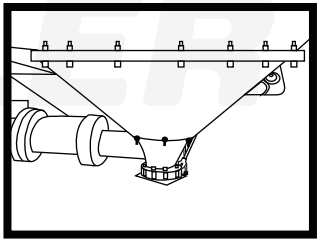
DISCHARGE CONE TYPES



1. AIR BAND DIAPER TYPE

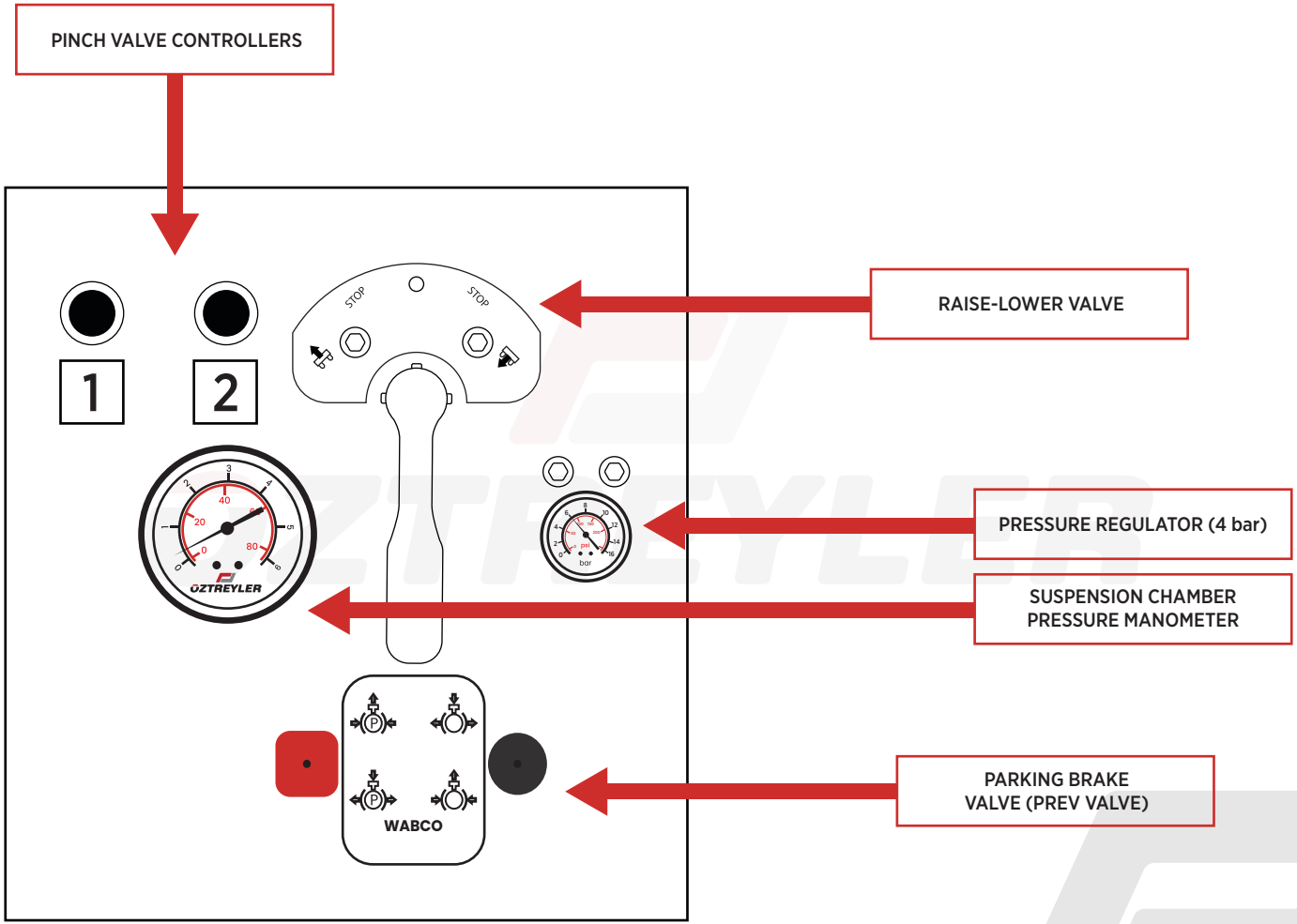


2. AERATOR TYPE



3. FLANGE TYPE

IMPORTANT: DO NOT CHANGE SETTINGS OF PRESSURE REGULATOR FOR THE SEMI-TRAILERS WHICH HAS PRESSURE REGULATOR FOR PINCH VALVES. IN NECESSARY CONDITIONS, ADJUST 4 BARS AFTER CHANGING.


PINCH VALVE CONTROLLERS
1
2
STOP
STOP
RAISE-LOWER VALVE
PRESSURE REGULATOR (4 bar)
SUSPENSION CHAMBER
PRESSURE MANOMETER
PARKING BRAKE
VALVE (PREV VALVE)
OZTREYLER
WABCO

MAINTENANCE SCHEDULE

1. PLEASE CHECK CONNECTION BOLTS AND INSTALLATION CONNECTIONS EVERY DAY.

2. PLEASE CHECK IF THERE IS ANY DEFORMATION ON THE TANK SURFACE EVERY DAY.

3. PLEASE CHECK IF THERE IS LEAKAGE IN THE PIPING EVERY DAY.

4. DURING EACH DISCHARGE, PLEASE CONFIRM THAT SECURITY VALVE IS TURNING ON ITSELF ON 2,1~2,2 bar.

5. WHEN YOU SPOTTED ANY PROBLEM, PLEASE INFORM AUTHORISED SERVICE POINT.



****** THERE ARE 2 PCS OF PRESSURE DISCHARGE VALVE ON EVERY SILO SEMI-TRAILER.**

TROUBLE-SHOOTER

*** PLEASE RESPECT INSTRUCTIONS OF FILLING STATIONS FOR FILLING PROCESS.

*** PLEASE RESPECT INSTRUCTIONS OF DISHARGE STATION FOR DISCHARGE PROCESS.

A- SYSTEM WITH PRESSURE AIR SOURCE IS THE SITE		
Pressure level is not increasing	Manometers should be checked	If manometer is broken, it should be changed.
	Pressure discharge valves should be checked	Valves should be turned off.
	Valves on the collector line should be checked.	Accelerator (JET) line valves should be turned off.
	Pressure air coming from the site should be checked	If pressure air is not flowing, please consult the responsible of the site.
	Pinch valves should be checked.	Should be turned off.
Material is not getting out	Pinch valves should be checked	They should be turned on.
	Pressure level should be checked.	If the pressure of the silo tank is low, it should be increased.
	Accelerator (JET) line valves should be checked.	They should be turned on.

**** PLEASE CONTACT OZTREYLER FOR EVERY BREAKDOWN.