Service and Installation Manual

(1) 6" x 102'- 0" LG SCREW CONVEYOR ASSY

SAVAGE RANGE SYSTEMS

M12-8100221-1

12/1/2003

Martin Sprocket && Gear

SAFETY AND INSTALLATION

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Conveyor Division

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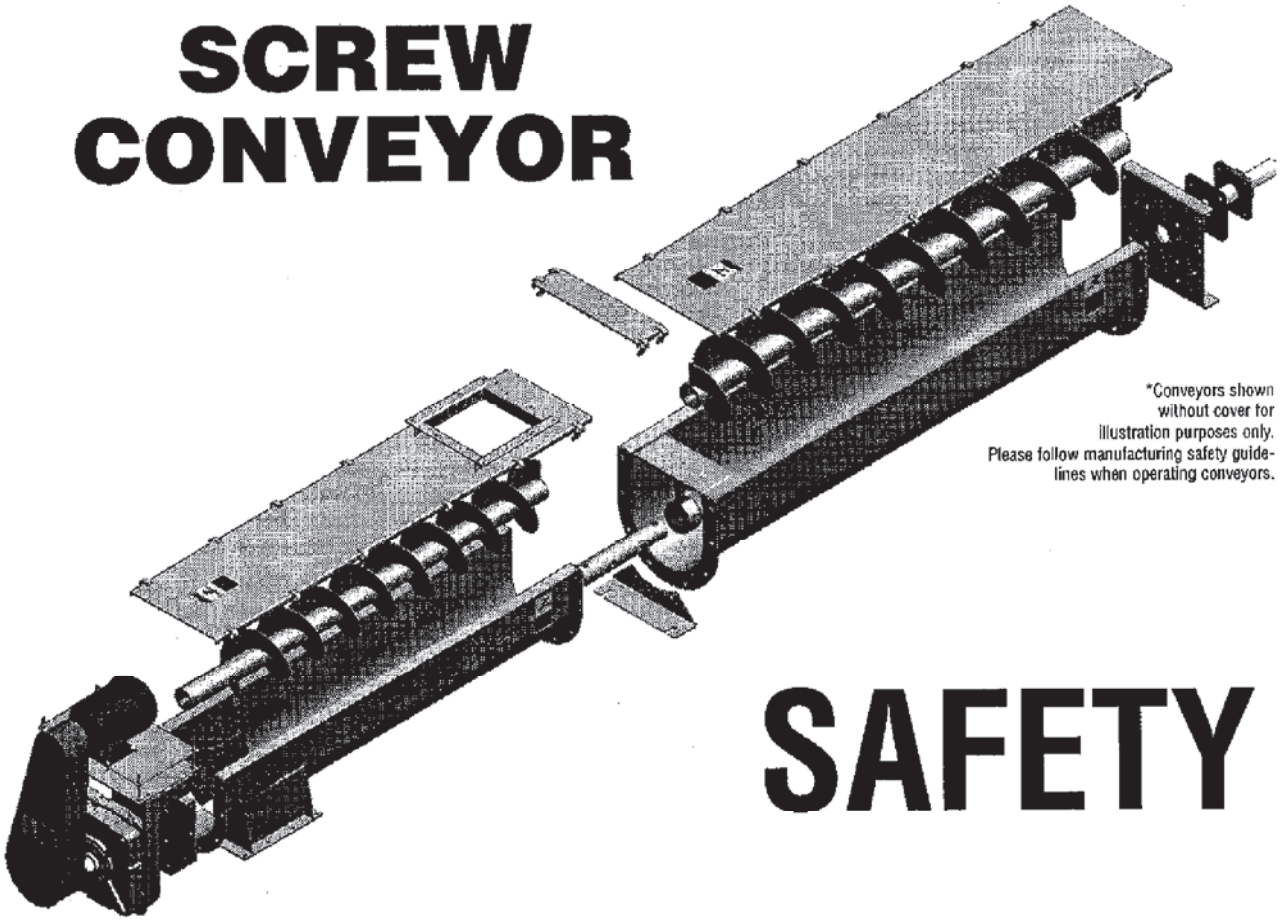
SCREW CONVEYOR



*Conveyors shown without cover for illustration purposes only. Please follow manufacturing safety guidelines when operating conveyors.

SAFETY

INSTALLATION • OPERATION • MAINTENANCE INSTRUCTIONS

Safety

Martin—Conveyor Division does not install conveyor; consequently it is the responsibility of the contractor, installer, owner and user to install, maintain and operate the conveyor, components and conveyor assemblies in such a manner as to comply with the Williams-Steiger Occupational Safety and Health Act and with all state and local laws and ordinances and the American National Standard Institute (ANSI) B20.1 Safety Code.

In order to avoid an unsafe or hazardous condition, the assemblies or parts must be installed and operated in accordance with the following minimum provisions.

1. Conveyors shall not be operated unless all covers and/or guards for the conveyor and drive unit are in place. If the conveyor is to be opened for inspection cleaning, maintenance or observation, the electric power to the motor driving the conveyor must be LOCKED OUT in such a manner that the conveyor cannot be restarted by anyone; however remote from the area, until conveyor cover or guards and drive guards have been properly replaced.
2. If the conveyor must have an open housing as a condition of its use and application, the entire conveyor is then to be guarded by a railing or fence in accordance with ANSI standard B20.1-1993, with special attention given to section 6.12.
3. Feed openings for shovel, front loaders or other manual or mechanical equipment shall be constructed in such a way that the conveyor opening is covered by a grating. If the nature of the material is such that a grating cannot be used, then the exposed section of the conveyor is to be guarded by a railing or fence and there shall be a warning sign posted.
4. Do not attempt any maintenance or repairs of the conveyor until power has been LOCKED OUT.
5. Always operate conveyor in accordance with these instructions and those contained on the caution labels affixed to the equipment.
6. Do not place hands or feet in the conveyor.
7. Never walk on conveyor covers, grating or guards.
8. Do not use conveyor for any purpose other than that for which it was intended.
9. Do not poke or prod material into the conveyor with a bar or stick inserted through the openings.
10. Keep area around conveyor drive and control station free of debris and obstacles.
11. Always regulate the feeding of material into the unit at a uniform and continuous rate.
12. Do not attempt to clear a jammed conveyor until power has been **LOCKED OUT**.
13. Do not attempt field modification of conveyor or components.
14. Screw conveyors are not normally manufactured or designed to handle materials that are hazardous to personnel. These materials which are hazardous include those that are explosive, flammable, toxic or otherwise dangerous to personnel. Conveyors may be designed to handle these materials. Conveyors are not manufactured or designed to comply with local, state or federal codes for unfired pressure vessels. If hazardous materials are to be conveyed or if the conveyor is to be subjected to internal or external pressure, Martin—Conveyor Division should be consulted prior to any modifications.

Martin—Conveyor Division insists that disconnecting and locking out the power to the motor driving the unit provides the only real protection against injury. Secondary safety devices are available; however, the decision as to their need and the type required must be made by the owner-assembler as we have no information regarding plant wiring, plant environment, the interlocking of the screw conveyor with other equipment, extent of plant automation, etc. Other devices should not be used as a substitute for locking out the power prior to removing guards or covers. We caution that use of the secondary devices may cause employees to develop a false sense of security and fail to lock out power before removing covers or guards. This could result in a serious injury should the secondary device fail or malfunction.

There are many kinds of electrical devices for interlocking of conveyors and conveyor systems such that if one conveyor in a system or process is stopped other equipment feeding it, or following it can also be automatically stopped.

Electrical controls, machinery guards, railings, walkways, arrangement of installation, training of personnel, etc., are necessary ingredients for a safe working place. It is the responsibility of the contractor, installer, owner and user to supplement the materials and services furnished with these necessary items to make the conveyor installation comply with the law and accepted standards.

Conveyor inlet and discharge openings are designed to connect to other equipment or machinery so that the flow of material into and out of the conveyor is completely enclosed.

One or more caution signs (as illustrated below) are attached to conveyor housings, conveyor covers and screw elevator housings. Please order replacement caution labels should the labels attached to this equipment become illegible.

The label shown below has been reduced in size. The actual size is printed next to the label. For more detailed instructions and information, please request a free copy of our "Screw Conveyor Safety, Installation, Operation, Maintenance Instructions."

The Conveyor Equipment Manufacturer's Association (CEMA) has produced an audio-visual presentation entitled "Safe Operation of Screw Conveyors, Drag Conveyors, and Bucket Elevators." Martin—Conveyor Division encourages acquisition and use of this source of safety information.

ACTUAL SIZE 6" x 3"

PROMINENTLY DISPLAY IN WORK AREAS

ACTUAL SIZE 5" x 2½"

Installation

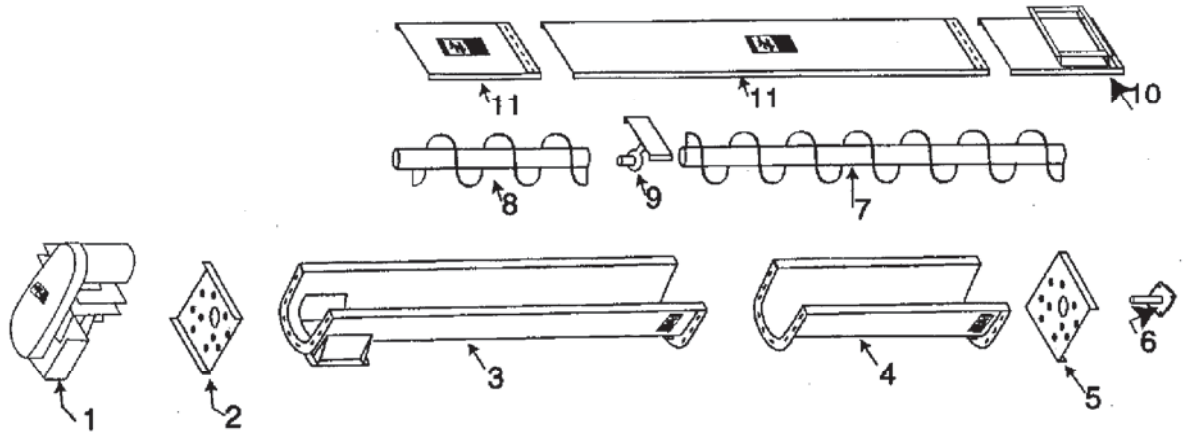
RECEIVING

Immediately upon receipt all items in the conveyor or component shipment should be checked against shipping papers for shortages and inspected for damage. Items to be checked include bent or dented troughs, covers, flights, pipes, hangers, guards, drives, etc. Note claims for damaged parts on shippers papers and immediately file a claim. DO NOT ATTEMPT TO INSTALL A DAMAGED ITEM OR CONVEYOR.

LIFTING AND MOVING

Extreme care must be taken to prevent damage when moving assembled conveyors or components. Spreader bars with slings are the recommended support method for lifting. The unsupported span should be no longer than 10 to 12 feet. Never lift a conveyor with only one support point. Unusually heavy items such as drives or gates shall be considered when choosing support points because of load balance and their bending effect.

ASSEMBLY



1. Screw Conveyor Drive, Motor Mount, V-Belt Drive and Guard
2. End Plate for Screw Conveyor Drive
3. Trough with Fitted Discharge Spout
4. Trough
5. End Plate for Ball Bearing
6. Seal Plate, Flanged Ball Bearing Unit and Tail Shaft
7. Screw
8. Screw with Bare Pipe at Discharge End
9. Hanger with Bearing and Coupling Shaft
10. Flanged Cover with Inlet
11. Flanged Covers with Buttstrap

The above diagram is representative only. It is the responsibility of the purchaser to consult contract drawings for specific items on each conveyor.

For safety and proper operation screw conveyors must be assembled and erected straight and true. It is the responsibility of the purchaser to insure all support and mounting surfaces are level and true so there is no distortion in the conveyor.

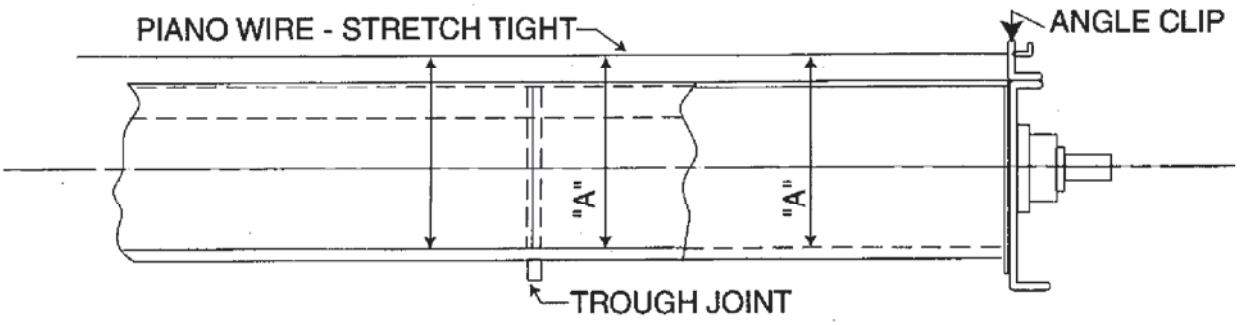
All component pieces (or conveyor sections) should be placed in proper sequence before assembly is started.

Sub-assemblies such as trough end and seal/bearings should be assembled (if not shipped preassembled) and alignment of seals and bearings and seal direction should be checked.

Installation

For shop assembled Conveyors, Units are match marked, and shipped in longest sections practical for shipment. Field assembly can be accomplished by connecting marked joints and in accordance with packing list and or drawing if applicable. In field erection, the mounting surfaces for supporting the conveyor must be level and true so there is no distortion in the conveyor. Shims or Grout should be used when required. Check for straightness as assembly is made.

For Conveyor assemblies purchased as parts or merchandise, assemble as follows: Place conveyor troughs in proper sequence with inlet and discharge spout properly located. Connect the trough flanges loosely. Do not tighten bolts. Align the trough bottom center-lines perfectly using piano wire (or equivalent) then tighten flange bolts. Tighten all anchor bolts.



Assembly of conveyor screws should always begin at the thrust end. If the thrust end is not designated, assembly should begin at the drive end. If a thrust end is designated, assemble trough end and thrust bearing. Insert the end, or drive shaft, in the end bearing. Do not tighten set screws until conveyor assembly is completed.

1. Place the first screw section in the trough, slipping the end or drive shaft into the pipe end. Secure tightly with coupling bolts. Install so that conveyor end lugs are opposite the carrying side of the flight.

2. Place a coupling shaft into the opposite end of conveyor pipe. Tighten coupling bolts.

3. Slide hanger with bearing over coupling shaft and clamp hanger to trough.

4. Assemble alternately, conveyor screws, couplings and hangers until all screws are installed repeating steps 1, 2, and 3.

   a) With Hangers: Assemble screw section so that flighting at each end is approximately 180° from ends of flighting of adjacent sections. Also, adjust conveyor screw and thrust unit so that hangers are equally spaced between adjacent screws. After each hanger is installed, rotate the conveyor by hand to insure that no binding occurs. Remove hanger clamps and bolt hanger to trough with the bearing centered between conveyor screws.

   b) Without Hangers: (close coupled) Assemble screws so that flighting at adjoining ends of screw sections align to produce a continuous helix surface. (Note coupling holes have been drilled in assembly to allow for flight alignment.)

5. The end shaft should be inserted through the trough end bearing/seal into the terminal screw section. Install and tighten coupling bolts. The bearing and seal should be adjusted to be true and concentric on the shaft and bolts tightened. If packing gland type seals are used, they should be tightened only enough to prevent leakage. Check waste pack type seals to insure packing is loose but sufficiently tight to prevent leakage.

Installation

6. Install trough covers in proper sequence. Properly locate inlet openings. Handle covers with reasonable care to avoid warping or bending. Attach covers securely to trough. Do not overtighten as cover damage may result.

7. Rotate conveyor by hand to insure no binding occurs.

8. Install drive at proper location and in accordance with separate instructions or drawing provided. Install all guards.

9. Check screw rotation for proper direction of material travel after electrical connections have been made, but before attempting to handle material. Incorrect screw rotation can result in serious damage to the conveyor and to related conveying and drive equipment.
   If necessary, reconnect electrical leads to reverse rotation of conveyor and direction of material flow.

10. Attach all gates, feed chute, discharge chute, etc. and connect all safety devices and controls. CAREFULLY TEST TO INSURE PROPER OPERATION.

Operation

Lubricate all bearings and drives per service instructions. Gear reducers are normally shipped without lubricant. Refer to service instructions for lubrication.

Check conveyor to insure all tools and foreign materials have been removed.

Check conveyor to insure all covers, guards, safety devices and controls are installed and operating correctly.

In start-up of the conveyor, operate several hours empty as a break in period. Observe for bearing heat up, unusual noises or drive misalignment. Should any of these occur, check the following and take necessary corrective steps. (non-lubricated hanger bearings may cause some noise)

1) When anti-friction bearings are used, check for proper lubrication. Insufficient or excess lubricant will cause high operating temperatures.

2) Misalignment of trough ends, screws, hangers and trough end can require excessive maintenance and cause poor life expectancy.

3) Check assembly and mounting bolts; tighten if necessary.

After the conveyor has been run per the above instructions, stop the conveyor. **Lock out all power,** and check discharge to insure it is clear and material flow through the discharge will not be impeded in any way.

Restart the conveyor and gradually begin to feed material. The feed rate should be gradually increased until the design capacity is reached.

Do not overload conveyor. Do not exceed conveyor speed, capacity, material density, or rate of flow for which the conveyor and drive were designed.

Cut off feed and allow the conveyor to empty. Lock out all power supply. Check all bolts and all alignments. Realign as necessary and tighten all bolts.

If the conveyor is to be inoperative for a prolonged period of time, operate conveyor until cleared of all material. This is particularly important when the material conveyed tends to harden or become more viscous, or sticky if allowed to stand for a period of time.

It may be necessary to recenter hanger bearings after running material in conveyor.

Check motor amperage frequently.

It is extremely important the following precautions be followed to prevent personal or property damage:

1) Only persons properly trained and familiar with screw conveyors be permitted to operate or maintain the unit.

2) LOCK OFF ALL POWER prior to any inspection or maintenance, refer to ANSI Standard ANSI Z244.1.244.l.

3) Periodically run the conveyor empty for a few minutes to check for excessive vibration, loose fasteners, security of covers and guards, noise, and bearing and drive temperature.

4) ALWAYS operate the conveyor with covers, guards, safety labels in place.

5) NEVER walk on or cross conveyor covers, guards, or grating.

6) DO NOT place hands, feet, or clothing in conveyor openings.

7) DO NOT poke or prod the conveyor or material in the conveyor.

B) Always practice good housekeeping and keep a clear view of the conveyor loading and discharges.

Problem Cause/Remedy Chart

PROBLEM	CAUSE	REMEDY
PREMATURE TROUGH FAILURE	A) Gauge too light	A) Increase thickness. Consult catalog materials table / component series for recommendation.
	B) Screw deflection	B) Eliminate excessive deflection. Consult catalog for calculation pro. cedure to determine proper pipe size and screw length.
	C) Bent screw	C) Straighten or replace. Check before operation.
ACCELERATED FLIGHT TIP WEAR	A) Gauge too light	A) Increase thickness. Consider hardfacing.
	B) RPM's too high	B) Slow conveyor down. Consult catalog engineering section to determine proper trough loading.
COUPLING SHAFT BREAKAGE	Torque capacity insufficient	Increase torque capacity or use larger shaft. Check motor amp demand for torque requirements.
SHAFT HOLE ELONGATION	A) Insufficient number of bolts	A) Increase number of bolts.
	B) Conveyor subject to "jogging" or too frequent stop/start, or frequent overloads	B) Cease jogging or frequent stop/ start or overload. If this is not possible increase bearing capacity of shaft and/or increase number of bolts.
DRIVE SHAFT BREAKAGE	Excessive torque insufficient torque capacity. Obstruction in conveyor	Recalculate HP requirements. Increase torque capacity. Check screw alignment.

Problem Cause/Remedy Chart

PROBLEM	CAUSE	REMEDY
MOTOR/HEATERS OVERLOAD	Amp demand excessive for motor	Recheck horsepower calculations. Check material characteristics. Check capacity. Regulate feed.
INLET TROUGH END BEARING FAILURE	A) Material getting into bearing	
	B) Insufficient lubrication	B) Lubricate properly
	C) Shaft slope	C) Align screw. Check for excessive screw deflection and for bent screw.
DISCHARGE TROUGH END BEARING FAILURE	A) Material getting into bearing	A) 1. Add or upgrade seal. 2. Change to outboard bearing. 3. Cut off flight at center of dis charge.
HANGER BEARING FAILURE	A) Incorrect alignment	A) Align hanger.
	B) Heat due to hot material being conveyed	B) Use appropriate bearing material.
	C) Heat due to insufficient lubrication	C) Properly lubricate
	D) Thrust due to pipe pressing on bearing insert	D) Check coupling bolts and holes for elongation and wear. Replace as necessary. Readjust screw/ hanger assembly to get proper clearances.
	E) Improper material causing premature wear	E) Consult catalog for proper material due to temperature, trough loading, and speed. Check to insure coupling shaft material and bearing material are compatible.

MAINTENANCE

Before any maintenance or inspection is performed, refer to ANSI Standard ANSI Z 244A.4. For minimum safety requirements covering lockout or tagout of energy sources for personal safety.

Practice good housekeeping. Keep the area around the conveyor and drive clean and free of obstacles to provide easy access and to avoid interference with the function of the conveyor and drive.

Establish routine periodic inspections of the entire conveyor to insure continuous maximum operating performance.

To replace conveyor screw section, proceed as follows:

1) Removal of a section, or sections, usually must proceed from the end opposite the drive. Make sure drive and electrical power are disconnected before starting to disassemble.

2) Remove the trough end, sections of screws, coupling shafts, and hangers until all sections have been removed, or until the damaged or worn sections is reached and removed.

3) To reassemble follow the above steps in reverse order.

4) Quick Detachable conveyor screws can be removed at intermediate locations without first removing adjacent sections.

Replacement parts can be identified from a copy of the original packing list, invoice, or drawing.

The coupling bolt lock nut may become damaged when removed. It is recommended practice to replace them rather than re-use them when changing conveyor screw sections.

Periodic inspections should be made of the following:

1) Trough. Check for wear and alignment. Tighten all bolts.
2) Shafts. Check for wear. Check for bolt hole elongation and wear. 3) Flights. Check edges for wear or damage.
4) Bolts and nuts. Check all for wear and tightness.
5) Seals. Check for leakage, adjustment, and wear.
6) Guards. Check for oil level (if applicable). Check nuts and bolts for tightness.
7) Bearings. Check for-lubrication. Refer to specific instructions as various types of bearings require varying frequency of lubrication and varying types of lubrication. The following types of bearing materials may or may not require lubrication.
   - Bronze
   - Hard iron
   - Nylon
   - Teflon
   - Oil impregnated wood
   - Hard surfaced bearings

Extended Shutdown/Storage

If the conveyors are to have an extended shutdown or storage (beyond one month) the following should be performed:

1) Insure all foreign material is removed from the conveyor and surface coatings are in good order.

2) All bearings and drives are lubricated and protected per manufacturer's instructions.

3) Screws are rotated every two weeks.

4) The conveyor is protected from weather, moisture, and extreme temperatures. Do not use plastic or other coverings which promote condensation under the covering.

5) All exposed metal surfaces are coated with a rust preventative oil that is applied per instructions.

6) Prior to start-up, inspection and service instructions contained in this manual must be performed.

PARTS

LIST

Conveyor Division

BY: DJL

(1) 6" x 102" LG. SCREW CONVEYOR ASSY
PUBLIC RANGE

RACK# 8

ORDER NO: 12-8100221-1
Entered: 12-1-03
CUSTOMER:SAVAGE RANGE SYS.
Ship Date:2-2-03

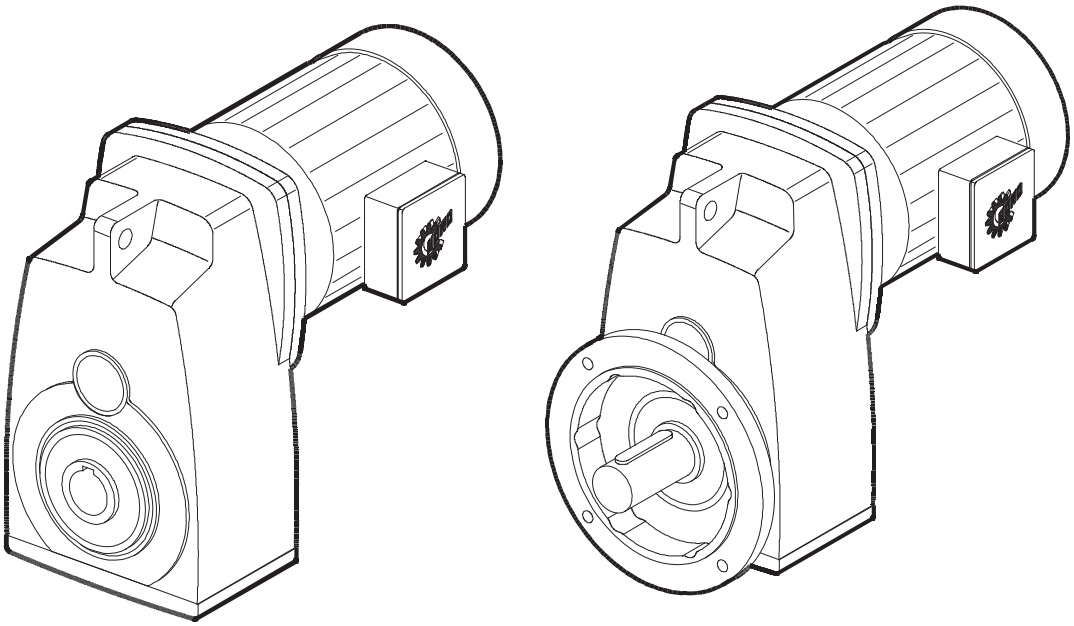
NO.	QTY.	DESCRIPTION	LOCATION	CARD
01	10	6CTF10- 10'- 0" LG FORMED FLANGE U-TROUGH	f/s	
02	1	6CTF10- 1'-11-7/8" LG FORMED FLANGE U-TROUGH w/ DISCHARGE	mto	1
		OPENING 6TSD12 DISCH. FITTED @ 45°	19K03	
03	10	10 GA TROUGH EXTENSIONS w/ 90° ELBOWS WELDED IN PLACE	mto	2
04	1	10 GA TROUGH EXTENSIONS w/ 90° ELBOWS WELDED IN PLACE	mto	3
05	1	LOT OF LATEX CAULK	f/s	
06	1	6TEF4-BB-P 2"Ø ENDPLATE w/ FEET 1/2" THK	mto	4
07	1	6TEF-BLANK ENDPLATE w/ FEET 1/4" THK	mto	5
08	10	6TS TROUGH SADDLES SHIP LOOSE	05E19	
09	9	6.75H412-R- 9'- 10" LG. HELICOID SCREW, MOUNTED ON 2 1/2" SCH	mto	6
		40 PIPE, 6" PITCH, w/ 3-BOLT DRILLING , STND WELDS		
10	1	6.75H412-R- 11'- 8" LG. HELICOID SCREW, MOUNTED ON 2 1/2" SCH	mto	7
		40 PIPE, 6" PITCH, w/ 3-BOLT DRILLING , STND WELDS		
11	60	CCB4 COUPLING BOLTS	05D23	
12	1	CHE4-3 2"Ø x 9-7/8" LG HANGER END SHAFT	mto	8
13	9	6CH2164 HANGER FRAME	mto	9
14	9	CHB2164H 2"Ø HARD IRON HANGER BRG	05P15	
15	9	CC4-3-H 2"Ø x 17-1/2" LG COUPLING SHAFTS	mto	10
16	4	6TCF16-2'- 0" LG FORMED FLANGE TROUGH COVERS,	mto	11
		BOLTED ON 12" c/c w/ BUTTSTRAPS SHIP LOOSE		
17	20'	SP150 1/8" SPONGE RUBBER COVER GASKET	05E25	
		3 HP @ 17 RPM NORD DRIVE UNIT		
18	1	BALDOR # VM3611T MOTOR 3 HP @ 1725 RPM TEFC, C-FACE 182TC	r/q	
19	1	NORD SK5282AZB-180TC REDUCER, 117.37:1 RATIO, 2 7/16" STND	r/q	
		HOLLOW BORE, C-FACE, FIXING ELEMENTS, B14 FLANGE PATTERN		
20	1	2" Ø , 3-BOLT DRIVE SHAFT	mto	12
21	1	ADAPTER PLATE PACKING GLAND ADAPTER	mto	13
22	1	LOT OF ASSEMBLY BOLTS	f/s	
		(200) 3/8" x 1-1/4" LG. HHCS w/FLN		
		(6) M12 x 30 MM SHCS		
		(4) 5/8" x 3-1/2" LG HHCS		

MACHINERY PARTS

Gebruiks- en onderhoudsinstructies
Operating and Maintenance Instruction
Instructions de conduite et d'entretien

B 1020
04/2001
NL GB F

Bewaar deze veiligheidsinstructies op een toegankelijke plaats
These safety instructions must be kept available
Ces instructions de sécurité doivent être observées



Vlakke tandwielmotorreductoren Helical Shaft

Mounting Gearboxes

Réducteurs à arbres parallèles

Getriebebau NORD
GmbH & Co. KG
D-22934 Bargteheide · P.O.Box 1262
D-22941 Bargteheide · Rudolf-Diesel-Straße 1
Tel. 0 45 32/4 01-0 · Telefax 0 45 32/40 15 55
NORD Internet: http://www.nord.com

Δ Waarschuwing
Er wordt principieel van uitgegaan dat alle werk-zaamheden betreffende transport, montage, installatie, ingebruikstelling, onderhoud en repa-ratie uitsluitend verricht worden door vakmensen of dat er toezicht op wordt gehouden door vak-bekwaam verantwoordelijk personeel. Verzeker u ervan dat tijdens het werken aan de motorreductor de netspanning is uitgeschakeld en dat opnieuw inschakelen van de netspanning onmogelijk is.

Δ Caution
It is presumed that fundamental project work as well as all work with regard to transport, assembly, installation, starting-up, maintenance and repair is performed by qualified personnel or supervised by skilled labour taking overall responsibility. Make absolutely sure that no voltage is applied at all while work is being done on the geared motor. Drive must also be secured against switching on.

Δ Avertissement
Il est impératif que les travaux fondamentaux de l'installation, ainsi que tous les travaux de transport, montage, installation, mise en exploitation, entretien et réparation soient accomplis par du personnel qualifié et contrôlés par des techniciens spécialisés dans ce domaine. Avant toute intervention sur le motoréducteur, il faut s'assurer que celui-ci n'est plus sous tension et que la remise sous tension soit interdite.

Δ Waarschuwing
Iedere afwijking van normale werkomstandig-heden (verhoogd afgenomen vermogen, temperatuur, vibraties, geluid, enz.) of het in werking treden van waarschuwingssignalen doet slecht functioneren vermoeden. Stel het verantwoordelijke onderhoudspersoneel onmiddellijk op de hoogte teneinde storingen, die tot directe of indirecte materiële schade of persoonlijk letsel kunnen leiden, te vermijden.

Δ Caution
Any deviation from normal operating conditions (increased power consumption, temperature, vibrations, noise etc.) or warning signals by monitoring equipment suggest malfunction. Inform the responsible maintenance personnel at once to prevent the trouble from getting worse and causing, directly or indirectly, serious physical injury or material damage.

Δ Avertissement
Si en utilisation normale, des modifications de fonctionnement apparaissent telles que puissance absorbée trop élevée, température élevée, vibrations fortes, bruit intense etc. ou en rapport avec les contrôles techniques, cela laisse supposer que différentes fonctions de l'appareil peuvent être détériorées. Pour éviter ensuite des problèmes, qui pourraient entraîner de graves accidents corporels ou de graves dégats matériels, le personnel d'entretien compétent doit immédiatement être informé.

Δ In twijfelgevallen de spanning ogenblikkelijk verbreken!

Δ In case of doubt disconnect the machine immediately!

Δ Si vous êtes dans le doute, coupez immédiatement l'alimentation!

Opstellen, voorbereiden
- De hijsogen aan de reductor zijn afgestemd op het te dragen gewicht.
- De fundatie moet voldoende groot en trillingsvrij zijn uitgevoerd.
- Monteer de reductor en de motor stevig en zonder spankrachten.
- Zorg voor voldoende ventilatie.
- Gebruik de standaard schroefdraad (DIN 332) om verbindingselementen op de assen te bevestigen.
- Vermijd slagen op de assen (beschadiging lagers!)
- Gebruik bij voorkeur elastische koppelingen tussen de reductor en de aan te drijven machine.
- Alvorens in te schakelen aandrijfelementen vastzetten respectievelijk seegerring monteren.
- Bij opsteekreductoren met een reactiearm rubberen buffers gebruiken.

Preparing and performing installation
- Lifting devices on the drive are designed to carry the drive weight
- the foundation (base) should be of adequate size and vibration-proof
- install gear unit or geared motor rigid and braceless
- ensure sufficient ventilation
- make use of tapped hole (DIN 332) to suit fastening to the shaft end
- avoid shocks on shafts (bearing damage!)
- preferably use flexible coupling between output shaft and driven machine
- fit output elements to shaft end or secure feather key before starting the motor
- use torque arm with rubber buffer on shaft mounting gearboxes

Mise en place, préparation
- Le matériel utilisé pour la manutention doit tenir compte du poids de l'équipement
- prendre largement les dimensions des embases et les réaliser exemptes de vibrations
- monter les réducteurs et motoréducteurs solidement et sans haubanage
- prévoir une aération suffisante
- prévoir le taraudage conforme à la norme DIN 332 pour monter des accouplements sur les arbres d'entrée et de sortie
- éviter de donner des coups sur les arbres (cela pourrait détériorer le roulement!)
- lier autant que possible la machine et le réducteur avec des accouplements élastiques
- avant la mise en service, enlever l'élément d'accouplement ou/et fixer la clavette
- utiliser pour l'exécution arbre creux avec bras de réaction une butée en caoutchouc

Elektrische motoraansluiting
- Sluit de motor volgens het schakelvoorbeeld aan.
- Controleer of de netspanning en de frequentie overeenkomen met de informatie op het machineplaatje.
- Zorg voor een deugdelijke aarde-aansluiting.
- Zonodig draairichting corrigeren door het omwisselen van twee fasen.
- Niet benodigde kabelinvoeropeningen afsluiten en de reductor zelf stof- en waterdicht afdichten.
- Voorkom overbelasting en fasenuitval door een beveiligingsschakelaar te installeren.
- Stel de beveiligingsschakelaar in op nominale stroom.
- Schakelvoorbeelden op de laatste bladzijde.

Connection of motor
- Connect motor according to diagram
- make sure that mains voltage/frequency are in accordance with nameplate information
- make secure protective conductor conection
- if motor is running in reverse direction, interchange two phases
- Close unused cable entrances holes and the box itself in a dust- and watertight manner.
- install protective switches to prevent overload and phase failure
- set motor protection switch to nominal current
- wiring diagrams on the last page

Branchements électriques
- brancher le moteur selon le schéma
- s'assurer que la tension du réseau et la fréquence correspondent aux données inscrites sur la plaque signalétique
- Le cable de raccordement doit être protégé
- corriger un éventuel mauvais sens de rotation par une inversion de deux phases
- Les entrées de câbles non utilisées doivent être obturées, la boîte elle-même devant être fermée de façon à être étanche à l'eau et à la poussiére
- prévoir une protection électrique contre les surcharges, court-circuit et défaut de phases
- régler la protection électrique suivant l'intensité nominale du moteur
- schéma de branchement à la derniére page

Ingebruikstelling
- Neem in geval van langdurige opslag voorzorgsmaatregelen (zie standaard fabrieksspecificatie "Langdurige opslag").
- Controleer de positie van de oliepeilplug aan de hand van de montagepositietabellen in de betreffende catalogus.
- Controleer het oliepeil.
- Verwijder de afsluiting van de overdrukplug voor ingebruikname, zonodig een drukontluchtingsventiel monteren.
- Indien niet anders aangegeven: eerste olie-vulling volgens de smeermiddelentabel.
- Luchtgekoelde motoren zijn bedoeld voor omgevingstemperaturen van -20°C tot +40°C en voor installatiehoogten tot 1.000 m boven N.A.P.
- Gebruik in een omgeving met verhoogd explosiegevaar is beslist niet toegestaan, tenzij de motoren uitdrukkelijk hiervoor bedoeld zijn (zie hiervoor de betreffende voorschriften)

Starting up
- in case of long-time storage take special precautions (as provided in works standard sheet "Extended Storage")
- check position of oil-level plug with help of mounting position tables in applicable catalogue
- check oil-level
- prior to starting-up, remove vent plug from vent screw if necessary
- if not specified otherwise, first oil filling as is shown in list of lubricants
- air-cooled motors are designed for ambient temperautres between -20°C and +40°C and for installation at altitudes â 1.000 m above M.S.L.
- Their use in hazardous areas is prohibited unless they are expressly intended for such use (follow additional instructions)

Mise en fonctionnement
- si un stockage longue durée du réducteur est prévu, il faut prendre les dispositions nécessaires (voir spécification "Stockage longue durée")
- vérifier que la vis de niveau d'huile corresponde à la position de montage du réducteur (voir catalogue)
- contrôler le niveau d'huile
- enlever la mèche de la vis d'évent avant la mise en route (pour éviter une surpression) ou fixer le clapet d'évent sur le réducteur
- pour le premier remplissage voir le tableau des lubrifiants
- les moteurs autoventilés sont dimensionnés pour des températures ambiantes comprises entre -20°C et +40°C, ainsi que pour une altitude â 1000 mètres au-dessus du niveau de la mer
- Leur utilisation dans des atmosphères explosives est interdite, à moins qu'elles ne soient expressément prévues à cet effet (respecter les indications supplémentaires)

Onderhoud van de:
MOTOR
- Houd de motor stofvrij (oververhitting)
- Rollagers demonteren, schoonmaken en weer invetten.
- Zorg ervoor dat de gehele ruimte rond de lagers voor ca. 1/3 gelijkmatig met vet gevuld is.
- Kies het juiste type smeermiddel, zie de smeermiddelentabel hieronder.

MOTORREDUCTOR
- Controleer het oliepeil regelmatig.
- Ververs de olie na elke 10.000 werkuren of ten laatste na 2 jaar.
- Bij gebruik van synthetische oliën is de interval voor olie verversen tweemaal zo lang.
- Verkort de interval voor olie verversen bij extreme bedrijfsomstandigheden (hoge luchtvochtigheid, agressieve omgeving en grote temperatuurschommelingen)
- Combineer het olie verversen met een grondige schoonmaakbeurt van de reductor.

Δ Synthetische en minerale oliën niet vermengen! Dit geldt tevens voor afgewerkte oliën.

Maintenance
MOTOR
- remove dust deposit (overheating)
- dismount anti-friction bearings for cleaning and refill with grease
- ensure that the bearing cage is packed to about 1/3 with grease, distribute evenly
- select proper type of lubricating grease from following table

GEARBOX
- regular oil level check
- change lubricant every 10.000 working hours or after two years at the latest.
- combine the lubricant change with thorough cleaning of gear unit
- lubricant changing intervals will be twice as long if synthetic products are used
- extreme working conditions (high air humidity, aggressive media and large temperature variations) call for reduced lubricant changing intervals

Δ Synthetic and mineral lubricants must not be mixed either for filling or for disposal!

Entretien
DU MOTEUR
- enlever la poussière du moteur (échauffement)
- démonter les roulements, les nettoyer et les regraisser
- la cage des roulements doit être remplie au 1/3 environ
- lubrifiant voir tableau ci-après

DU REDUCTEUR
- vérifier régulièrement le niveau d'huile
- vidanger le lubrifiant après 10.000 heures de fonctionnement ou au plus tard après 2 ans d'utilisation.
- profiter de la vidange pour effectuer un nettoyage approfondi du réducteur
- pour des lubrifiants synthétiques, ce délai peut être doublé
- réduire les intervalles entre les vidanges dans des conditions d'utilisation extrêmes (hygrométrie élevée, ambiance agressive ou variations importantes des températures)

Δ Des lubrifiants synthétiques et minéraux ne doivent pas être mélangés! Ceci s'applique également pour le retraitement des lubrifiants!

HOEVEELHEID OLIE [cm³]	**CAPACITY [cm³]**				**QUANTITE DE LUBRIFIANT [cm³]**						
Montage positie	Horizontale positile Horizontal position Position horizontale										
Mounting position	**Vlakke motorreductoren tweetraps**			**Helical Shaft Mounting Gearboxes double reduction**				**Réducteurs à arbres parallèles à deux trains d'engrenages**			
Positions de montage	**1282**	**2282**	**3282**	**4282**	**5282**	**6282**	**7282**	**8282**	**9282**	**10282 ***	**11282 ***
H 1	900	1.650	3.150	4.700	7.500	17.000	25.000	37.000	74.000	90.000	165.000
H 2	900	1.900	3.250	4.750	7.500	12.000	20.000	30.000	55.000	40.000	145.000
H 3	950	1.800	3.150	4.700	7.200	14.000	21.000	31.000	59.000	82.000	140.000
H 4	950	1.800	3.150	4.700	7.200	10.000	16.000	31.000	69.000	60.000	100.000
Montage positie	Senkrechte Anordnung Vertical postion Position verticale										
Mounting position	**Vlakke motorreductoren tweetraps**			**Helical Shaft Mounting Gearboxes double reduction**				**Réducteurs à arbres parallèles à deux trains d'engrenages**			
Positions de montage	**1282**	**2282**	**3282**	**4282**	**5282**	**6282**	**7282**	**8282**	**9282**	**10282 ***	**11282 ***
H 5	1.200	2.000	4.100	5.400	8.800	17.500	27.000	41.000	72.000	90.000	195.000
H 6	1.300	2.400	4.100	6.100	8.800	14.000	21.000	33.000	70.000	90.000	160.000
Montage positie	Horizontale positile Horizontal position Position horizontale										
Mounting position	**Vlakke motorreductoren drietraps**			**Helical Shaft Mounting Gearboxes triple reduction**				**Réducteurs à arbres parallèles à trois trains d'engrenages**			
Positions de montage	**1382**	**2382**	**3382**	**4382**	**5382**	**6382**	**7382**	**8382**	**9382**	**10382 ***	**11382 ***
H 1	1.450	1.700	4.100	5.900	12.500	16.500	22.000	34.000	73.000	85.000	160.000
H 2	1.150	1.900	3.300	4.900	6.700	9.600	16.000	25.000	45.000	38.000	140.000
H 3	1.100	1.500	3.300	4.900	8.300	12.500	19.000	30.000	60.000	80.000	135.000
H 4	1.100	1.500	3.300	4.900	8.300	14.000	23.000	35.000	65.000	80.000	155.000
Bauform	Verticale postie Vertical postion Position verticale										
Mounting position	**Vlakke motorreductoren drietraps**			**Helical Shaft Mounting Gearboxes triple reduction**				**Réducteurs à arbres parallèles à trois trains d'engrenages**			
Positions de montage	**1382**	**2382**	**3382**	**4382**	**5382**	**6382**	**7382**	**8382**	**9382**	**10382 ***	**11382 ***
H 5	1.700	3.100	5.600	8.300	14.000	18.000	25.000	38.000	74.000	80.000	210.000
H 6	1.600	2.600	4.100	6.800	12.000	13.000	20.000	32.000	70.000	80.000	155.000

* De typen SK 10282 / SK 10382 and SK 11282 / SK 11382 worden standaard zonder olie geleverd.

* Types SK 10282 / SK 10382 and SK 11282 / SK 11382 are supplied without lubricant as a standard.

* Les réducteurs SK 10282 / SK 10382 et SK 11282 / SK 11382 sont livrés sant huile.

Het standaard smeermiddel voor motorreductoren is minerale olie. Synthetische olie is verkrijgbaar tegen meerprijs.
Standard lubricant for the gearboxes is mineral-oil. Synthetic oil is available at a surcharge.
Les réducteurs sont remplis d'huile minérale. Ils peuvent être remplis d'huile synthétique contre supplément de prix.

OPMERKING / REMARK / REMARQUE:
De opgegeven vulhoeveelheden zijn bij benadering. Controleer het oliepeil aan de hand van de oliepeilschroef.
Filling quantities are approx. figures. Oil level must be checked according to oil-level plugs.
Les quantités d`huile sont données à titre indicatif. Vérifier la quantité d'huile grâce à la vis de niveau d'huile.

Opmerking:
Deze lijst geeft een aantal compatibele smeermiddelen aan van diverse leveranciers. Binnen dezelfde viscositeitsklasse en type smeermiddel kan een vrije keuze gemaakt worden.
In het geval dat u voor een andere viscositeit of een ander smeermiddel kiest, dient vooraf contact met ons op te nemen, daar wij anders geen garantie kunnen nemen voor het goed functioneren van de aandrijving.

Note:
This table lists compatible lubricants of different suppliers. Within the same viscosity class and type of lubricant the supplier can be chosen freely. In case you change the viscosity class resp. the type of lubricant you should contact us in advance as otherwise we cannot assure the proper function of our drive and the warranty becomes void.

Indication:
Ce tableau présente les lubrifiants comparables des différents fabricants. Si l'on respecte les critères de viscosité et le type de lubrifiant, on peut uiliser n'importe quelle marque d'huile après ne vidange. Afin de pouvoir garantir un bon fonctionnement de nos réducteurs, veuillez nous consulter avant de remplacer un lubrifiant par un autre possédant des caractéristiques différentes de viscosité et de type.

Smeermiddelen / Type of lubricant / Type de lubrifiant

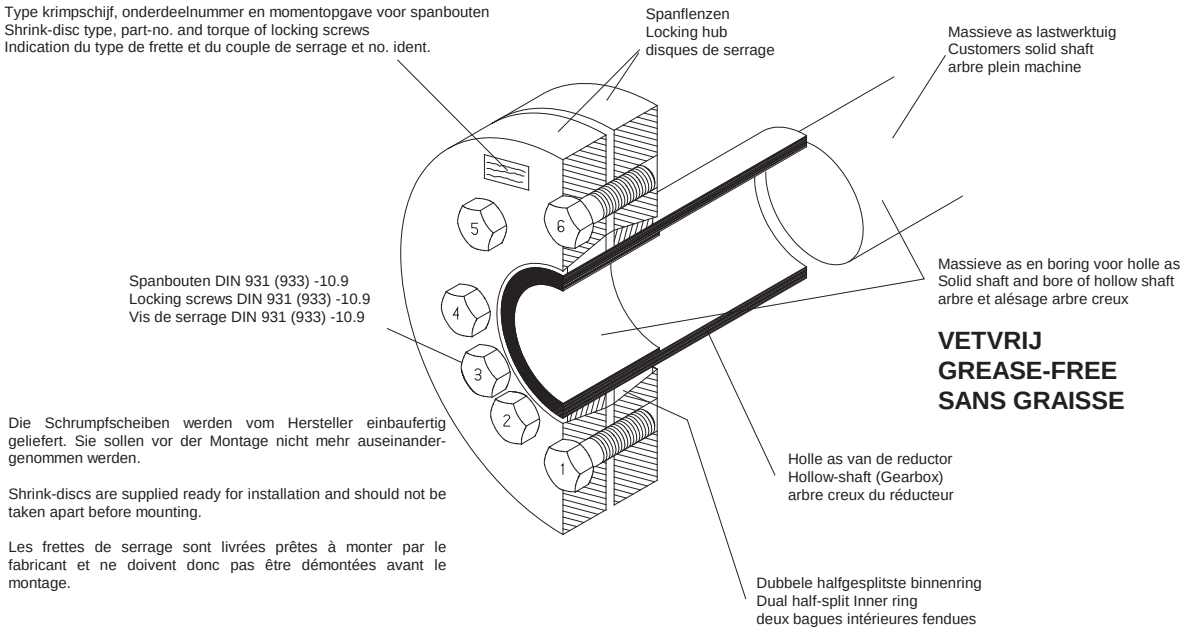
Type smeerolie **Type of lubricant** **Type de lubrifiant**	**Omgevingstemp.** **Ambient temp.** **Temp. ambiante**	ARAL	BP	Castrol	DEA	ESSO	FUCHS	KLÜBER LUBRICATION	Mobil	Optimol	Shell	Tribol
Minerale olie Mineral oil Huile minérale	0 ... 40°C ISO VG 680	Degol BG 680 Degol BG 680 plus	--	Alpha SP 680	Falcon CLP 680	--	Renolin CLP 680 CLP 680 Plus	Klüberoil GEM 1-680	Mobilgear: - 636 - XMP 680	Optigear BM 680	Shell Omala 680	Tribol 1100/680
	ISO VG 220 - 5 ... 40°C (normal)	Degol BG 220 BG 220 plus	Energol GR-XP 220	Alpha SP 220 Alpha MW220 Alpha MAX 220	Falcon CLP 220	Spartan EP 220	Renolin CLP 220 Renolin CLP 220 Plus	Klüberoil GEM 1-220	Mobilgear 630 Mobilgear XMP 220	Optigear BM 220	Shell Omala 220	Tribol 1100 / 220
	ISO VG 100 - 15 ... 25°C	Degol BG 100 BG 100 plus	Energol GR-XP 100	Alpha SP 100 Alpha MW 100 Alpha MAX 100	Falcon CLP 100	Spartan EP 100	Renolin CLP 100 Renolin CLP 100 Plus	Klüberoil GEM 1-100	Mobilgear: - 627 - XMP 110	Optigear BM 100	Shell Omala 100	Tribol 1100 / 100
	ISO VG 15 - 45 ... - 15°C *	Vitamol 1010	Bartran HV 15	Hyspin AWS 15 Hyspin SP 15 Hyspin ZZ 15	Astron HVLP 15	Univis J13	Renolin B 15 HVI	Isoflex MT 30 rot	Mobil DTE 11 M	Ultra 10	Shell Tellus T 15	Tribol 943 AW 22
Synthetische olie Synthetic oil Huile synthétique	-5 ... 60°C ISO VG 680	Degol GS 680	Energol SG-XP 680	--	--	--	Renolin PG 680	Klübersynth GH-6-680	Glygoyle HE 680	Optiflex A 680	Shell Tivela S 680	Tribol 800 / 680
	ISO VG 220 -25 ... 80°C *	Degol GS 220	Enersyn SG-XP 220	Alphasyn PG 220	Polydea PGLP 220	Glycolube 220	Renolin PG 220	Klübersynth GH-6-220	Glygoyle HE 220	Optiflex A 220	Shell Tivela WB Tivela S 220	Tribol 800/ 220
biologisch afbreekbare olie Biodegradable oil Huiles biodégradables	ISO VG 680 -5 ... 40°C	--	--	--	--	--	Plantogear CLP 680	--	--	--	--	--
	ISO VG 220 -5 ... 40°C	Degol BAB 220	Biogear SE 220	Carelub GES 220	Ergon ELP 220	--	Plantogear CLP 220	Klüberbio GM2-220	--	Optisynt BS 220	--	Tribol BioTop 1418 / 220
levensmiddelen olie [1] Food-grad oil [1] Huiles pour environnement alimentaire [1]	-5 ... 40°C ISO VG 680	--	--	--	--	--	Bel-Ray No-Tox Synt.Worm Gear Oil 680	Klüberoil 4 UH1-680 Klübersynth UH1 6-680	--	Optileb GT 680	Shell Cassida Fluid GL680	Tribol FoodProof 1800 / 680
	ISO VG 220 -25 ... 40°C	Eural Gear 220	--	Vitalube GS 220	--	Gear Oil FM 220	Bel-Ray No-Tox Gear Oil 90 Synt.Gear Oil 220	Klüberoil 4 UH1-220 Klübersynth UH1 6-220	Mobil DTE FM 220	Optileb GT 220	Shell Cassida Fluid GL220	Tribol FoodProof 1810 / 220 oder 1800 / 220
Synthetisch vloeibaar vet grease Graisse fluide synthétique	- 25 ... 60°C	Aralub BAB EP0	Enersyn GSF	Alpha Gel 00	--	Fließfett S 420	Renolit LX-PG 00	Klübersynth GE 46-1200 Klübersynth UH1 14-1600 [1]	Glygoyle Grease 00	Obeen UF 00	Tivela Comp. A Tivela GL 00	Tribol 800 / 1000

meerstofsoorten voor lagers / Type of lubricant for anti friction bearings / Type de librifiant pour roulements à rouleaux												
Type smeerolie Type of lubricant Type de lubrifiant	**Omgevingstemp. Ambient temp. Temp. ambiante**	ARAL	BP	Castrol	DEA	ESSO	FUCHS	KLÜBER LUBRICATION	Mobil	Optimol	Shell	Tribol
Vet (minerale olie basis) Grease (mineral oil basis) Graisse (base huile minérale)	- 30 ... 60°C (normal)	Aralub HL 2	Energrease LS 2	Spheerol AP 2 LZV-EP	Glissando 20	Mehr-zweckfett Beacon2	Renolit FWA 160	Klüberplex BEM 41-132	Mobilux 2	Longtime PD 2	Shell Alvania R2	Tribol 4020/220-2
	* - 50 ... 40°C	Aralub SEL 2	--	Spheerol EPL2	--	--	Renolit JP 1619	--	--	Longtime PD 1	Shell Alvania RL 2	Tribol 3785
Synthetisch vet Synthetic grease Graisse synthétique	* - 25 ... 80°C	Aralub SKL 2	--	Product 783/46	Discor B EP 2 LF	Beacon 325	Renolit S 2 Renolit HLT 2	Isoflex Topas NCA 52 Petamo GHY 133 N	Mobiltemp SHC 32	Optitemp LG 2	Aero Shell Grease 16 oder 7	Tribol 3499
biologisch afbreekbaar vet Biodegradable Grease Graisse biodégradables	- 25 ... 40°C	Aralub BAB EP 2	BP Bio-grease EP 2	Biotec	Dolon E EP 2	--	Plantogel 2 S	Klüberbio M 32-82	Schmierfett UE 100 B	EF 584	Shell Alvania RLB 2	Molub-Alloy BioTop 9488
levensmiddelen vet [1] Food-grade grease[1] Graisse pour environnement alimentaire [1]	- 25 ... 40°C	Eural Grease EP 2	BP Energrease FM 2	Vitalube HT Grease 2	Tamix FRA 1	Carum 330	Renolit G 7 FG 1	Klübersynth UH1 14-151	Mobil-grease FM 102	Obeen UF 2	Shell Cassida RLS 2	Molub-Alloy Food-Proof 823-2 FM

***** Bij omgevingstemperaturen onder -30°C en boven ca. 60°C moeten keerringen van speciaal materiaal gebruikt worden.
***** With ambient temperatures below -30°C and above approx. 60°C shaft sealing rings of a special material quality must be used
***** Lors d'une température ambiante inférieure à -30°C ou supérieure à environ 60°C, il y a lieu d'utiliser des joints d'étanchéité spéciaux

[1] levensmiddelen olie en vetten volgens voorschriften H1/FDA178.3570
[1] Food grade lubricants with USDA-H1 approval FDA 178.3570
[1] Huiles pour environnement alimentaire + graisses suivant prescription H1 / FDA 178.3570

Holle as met krimpschijf - Montage-, demontage- en onderhoudsaanwijzingen
Hollow shaft with shrink-discs - Assembly - Dismantling suggestions and maintenance
Exécution des arbres creux avec frette de serrage - Montage - Démontage et entretien



Montage:
1. Verwijder de transportbescherming tussen de flenzen (indien aanwezig).
2. Trek de spanbouten licht (met de hand) aan totdat er geen speling meer is tussen de flenzen en de binnenring. De binnenring moet nog soepel draaibaar zijn.
3. Vet de boring van de binnenring in, daardoor kan de krimpschijf gemakkelijk op de holle as van de reductor gemonteerd worden.
4. Monteer de holle as van de reductor op de as van het lastwerktuig.

De holle en massieve assen moeten schoon zijn en geheel v r ij v a n v e t. Uitzondering: vet de massieve as in aan de kant waar deze contact maakt met de bronzen bus van de holle as. De bronzen bus nooit invetten om vet worden van de plaats van de krimpschijf bij montage te voorkomen. Draai de spanbouten pas aan nadat de holle as op de volle as is geschoven.

5. Door de spanbouten licht aan te trekken nemen de spanflenzen automatisch de juiste positie in.
6. Trek de spanbouten meerdere malen één voor één aan in richting van de klok (nooit kruiselings), telkens 1/4 tot 1/2 slag. De spanbouten met een momentsleutel aantrekken totdat het op de krimpschijf of in de maattabellen aangegeven aantrekmoment bereikt is.

Demontage:
1. Draai de spanbouten een voor een los, telkens met ca. 1/4 slag per ronde. **Gevaar:** neem de spanbouten nooit geheel uit de schroefdraad!
2. Verwijder de spanflenzen van de conus van de binnenring.
3. Verwijder de reductor van de massieve as.

Onderhoud:
Een geïnstalleerde krimpschijf heeft geen onderhoud nodig. Was de krimpschijf lange tijd in gebruik en is deze gedemonteerd, dan moet de krimpschijf, voordat deze opnieuw gemonteerd wordt, geheel uit elkaar genomen en grondig gereinigd worden. Daarna moeten de kegelvlakken (conus) van de spanflenzen en de binnenring met Molycote G-Rapid plus of een vergelijkbaar smeermiddel ingevet te worden. De schroefdraad en de koppen van de bouten moeten met standaard vet behandeld worden

Installation instructions:
1. Remove transportation spacers (if provided) located between outer collars.
2. Lightly handtighten locking screws to eliminate play between outer collars and inner ring. You should still be able to easily turn inner ring.
3. Lightly lubricate the bore of the shrink-disc to facilitate easy mounting onto hollow-shaft of reducer.
4. Fit shrink-disc onto hollow-shaft and mount hollow-shaft reducer onto solid shaft.

Hollow- and solid shaft must be clean and f r e e f r o m a n y l u b r i c a n t .
Exception: Grease solid shaft at end where it will make contact with bronze bushing of the hollow-shaft when it is mounted. N e v e r g r e a s e the front of the solid shaft which makes contact under the shrink-disc. Tighten locking screws only after mounting the hollowshaft onto the solid shaft.

5. Now tighten locking screws only lightly to position outer collars.
6. Use torque wrench and equally tighten all screws one after another (never cross wise) in a clockwise or counter clockwise sequence by approximately 1/4 to 1/2 turn until specified tightening torque (per table) is reached.

Removal:
1. Loosen locking screws in sequence in several steps by using approximately 1/4 turns. **Danger** - Do not remove locking screws completely.
2. Loosen the outer collars from the double tapered inner ring.
3. Remove hollow-shaft reducer from solid shaft.

Maintenance:
An installed shrink-disc is maintenance free. Before reinstalling (after prolonged use) it should be taken apart and thorougly cleaned. Relubricate the taper of the outer collars and of the inner ring with Molycote G-Rapid plus or equivalent. Regrease screw threads and head contact area with mulitpurpose grease.

Procédure de Montage:
1. Les éventuelles protections de transport placées entre les surfaces de serrage doivent être retirées.
2. Les vis de serrage doivent être légèrement serrées à la main, jusqu'à ce qu'il n'y ait plus de jeu entre les surfaces de serrage. L'anneau intérieur doit toutefois pouvoir encore être tourné aisément.
3. L'alésage (D1) de la bague intérieure de la frette doit être légèrement graissé. De la sorte, le montage de la frette sur l'arbre creux est facilité.
4. Positionner l'arbre creux réducteur sur l'arbre machine.

L'arbre machine et l'arbre creux doivent absolument être e x e m p t - de - g r a i s s e - au niveau de la liaison par frette.
Préalablement au montage, l'arbre machine doit être graissé à l'endroit du position-nement prévu de la bague bronze de l'arbre creux. N e p a s g r a i s s e r la bague bronze, pour éviter un graissage du siège de la frette lors du montage.

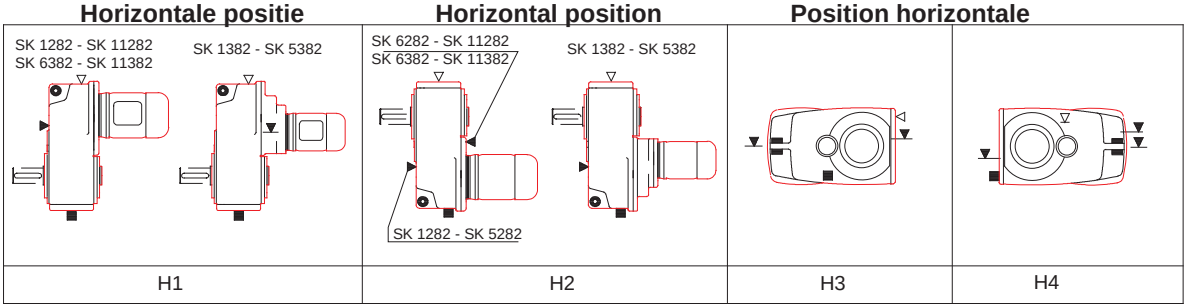
5. Serrer légèrement les vis de serrage de la frette, afin que les surfaces de serrage se positionnent automatiquement.
6. Serrer les vis dans le sens des aiguilles d'une montre les unes après les autres, en plusieurs fois, en faisant à chague fois d' 1/4 à 1/2 tour de vis. Ne pas serrer en diagonale! Utiliser une clef dynamométrique pour le serrage. Les couples de serrage sont indiqués sur les frettes, ou doivent être relevés sur les plans.

Procédure de démontage:
1. Les vis de serrage doivent être desserrées dans l'ordre, les unes après les autres, en plusieures fois, avec environ 1/4 de tour par vis à chaque fois. Ne pas sortir les vis du filetage. **Risque d'accident!!**
2. Le plan de serrage doit être écarté du cône de la bague intérieure.
3. Retirer le réducteur de l'arbre machine.

Entretien des frettes de serrage:
Une frette de serrage montée ne nécessite aucun entretien. Si une frette utilisée depuis un certain temps est demontée, un nettoyage préalable à toute nouvelle utilisation est nécessaire. Après nettoyage, les surfaces coniques de serrage et la bague intérieure doivent être enduites de Molykote G-Rapid Plus ou d'un type de graisse analogue. Les filetages et têtes de vis doivent être graissés normalement.

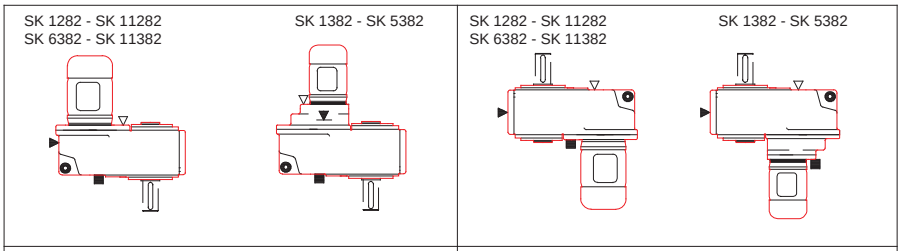
MONTAGEPOSITIES
MONTING POSITIONS
POSITIONS DE MONTAGE

Horizontale positie | Horizontal position | Position horizontale



H1	H2	H3	H4

Verticale positie | Vertical Position | Position verticale



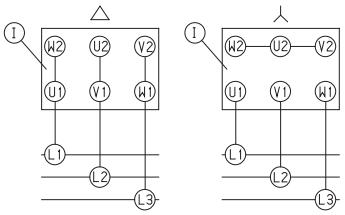
H5 *	H6

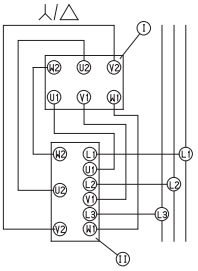
Symbolen: / Symbols: / Symboles:
- Ontluchting / Vent plug / Event
- Oliepeil / Oil level / Niveau d'huile
- Olie aftap / Drain plug / Vidange
- Rubberen buffer / Rubber buffer / Butées caoutchouc

*** Montagepositie H5 met olie-expansievat (zie catalogus G1000)**
*** Mounting position H5 with lubricant expansion unit (see catalogue G1000)**
*** Position de montage H5 avec réservoir de compensation de niveau d'huile (voir catalogue G1000)**

Schakelschema's / Wiring diagrams / Schémas de branchement

Drie fasen kortsluitanker motor
Three phase squirrel-cage motor
Moteur triphasé à cage d'écureull

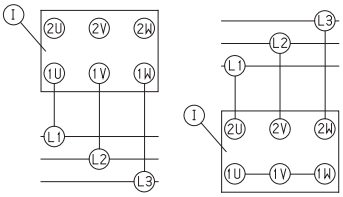




I) Klemmenbord
Terminal board
Plaque à bornes

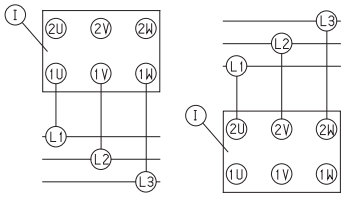
II) Schakelaar
Switch
Démarreur

Draaistroommotor met kortsluitanker, Dahlander schakeling
Three phase squirrel-cage motor, Dahlander connection
Moteur triphasé à cage d'écrureull, couplage Dahlander



lage - snelheid - hoge
low - speed - high
inférieure - vitesse - supérieure

Draaistroommotor, poolomschakelbaar, 2 gescheiden wikkelingen, 2 toerentallen
Three phase motor, polechanging, two separate windings, two speeds
Moteur triphasé à commutation de pôles, deux bobinages séparés, deux vitesses



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AC Motor Installation – Maintenance Instructions

Handling

The weight of the motor and shipping container will vary. Use correct material handling equipment to avoid injury.

Receiving

Inspect the motor for damage before accepting it. The Motor shaft should rotate freely with no rubs. Report any damage immediately to the commercial carrier that delivered your motor.

Safety Notice

Only qualified personnel trained in the safe installation and operation of this equipment should install this motor. When improperly installed or used, rotating equipment can cause serious or fatal injury. Equipment must be installed in accordance with the National Electrical Code (NEC), local codes and NEMA MG2 Safety Standards for Construction and Guide for Selection, Installation and Use of Electric Motors and Generators. Observe the following guidelines:

1. When eyebolts are provided, they must be fully tightened and are intended to lift the motor and its included accessories only.
2. Ground the motor according to NEC and local codes.
3. Provide a permanent guard to prevent accidental contact of body parts or clothing with rotating or moving parts or burns if motor is hot.
4. Shaft key must be secured before starting motor.
5. Do not apply power to the motor until the motor is securely mounted by its mounting holes.
6. This motor must only be connected to the proper line voltage, line frequency and load size.
7. If a motor mounted brake is installed, provide proper safeguards for personnel in case of brake failure.
8. Disconnect all power services and stop the motor before servicing.
9. For single phase motors, discharge the start and/or run capacitors before servicing.
10. Do not by–pass or render inoperative any safety device.
11. When using AC motors with frequency inverters, be certain that the Maximum Speed rating (on nameplate) is not exceeded.
12. Mounting bolts should be high tensile steel. Be sure to use a suitable locking device on each bolt (spring washer or thread lock compound).

Motor Enclosure

ODP, Open drip proof motors are intended for use in clean, dry locations with adequate supply of cooling air. These motors should not be used in the presence of flammable or combustible materials. Open motors can emit flame and/or molten metal in the event of insulation failure.

TEFC, totally enclosed motors are intended for use where moisture, dirt and/or corrosive materials are present in indoor and outdoor locations.

Explosion proof motors, as indicated by the Underwriters Laboratories, Inc. label are intended for use in hazardous areas as specified by the NEC.

Mounting

Foot mounted machines should be mounted to a rigid foundation to prevent excessive vibration. Shims may be used if location is uneven.

Flange mounted machines should be properly seated and aligned. Note: If improper rotation direction is detrimental to the load, check rotation direction prior to coupling the load to the motor shaft.

For V-belt drive, mount the sheave pulley close to the motor housing. Allow clearance for end to end movement of the motor shaft. Do not overtighten belts as this may cause premature bearing failure or shaft breakage.

Mounting Continued

Direct coupled machines should be carefully aligned and the shaft should rotate freely without binding.

Wiring

Connect the motor as shown in the connection diagram. The wiring, fusing and grounding must comply with the National Electrical Code and local codes. When the motor is connected to the load for proper direction of rotation and started, it should start quickly and run smoothly. If not, stop the motor immediately and determine the cause. Possible causes are: low voltage at the motor, motor connections are not correct or the load is too heavy. Check the motor current after a few minutes of operation and compare the measured current with the nameplate rating.

Lubrication

This is a ball bearing motor. The bearings have been lubricated at the factory. Motors that do not have regrease capability are factory lubricated for the normal life of the bearings.

Relubrication Intervals (For motors with regrease capability)

New motors that have been stored for a year or more should be relubricated. Lubrication is also recommended at these intervals:

Relubrication Intervals

NEMA (IEC) Frame Size	Rated Speed (RPM)			
	3600	1800	1200	900
Up to 210 incl. (132)	5500Hrs.	12000Hrs.	18000Hrs.	22000Hrs.
Over 210 to 280 incl. (180)	3600Hrs.	9500Hrs.	15000Hrs.	18000Hrs.
Over 280 to 360 incl. (225)	*2200Hrs.	7400Hrs.	12000Hrs.	15000Hrs.
Over 360 to 5000 incl.(300)	*2200Hrs.	3500Hrs.	7400Hrs.	10500Hrs.

* Lubrication interval for 6313 or 6314 bearings that are used in 360 through 5000 frame, 2 pole motors. If roller bearings are used, bearings must be lubricated more frequently, divide the interval by 2.

Lubricant

Baldor motors are pregreased, normally with Polyrex EM (Exxon Mobil). If other greases are preferred, check with a local Baldor Service Center for recommendations.

Procedure

Clean the grease fitting (or area around grease hole, if equipped with slotted grease screws). If motor has a purge plug, remove it. Motors can be regreased while stopped (at less than 80°C) or running.

Apply grease gun to fitting (or grease hole). Too much grease or injecting grease to quickly can cause premature bearing failure. Slowly apply the recommended amount of grease, taking 1 minute or so to apply. Operate motor for 20 minutes, then reinstall purge plug if previously removed.

Caution: Keep grease clean. Mixing dissimilar grease is not recommended.

Amount of Grease to Add

Frame Size NEMA (IEC)	Weight of grease to add ounce (gram)	Volume of grease to add	
		$inches^3$	teaspoon
Up to 210 incl. (132)	0.30 (8.4)	0.6	2.0
Over 210 to 280 incl. (180)	0.61 (17.4)	1.2	3.9
Over 280 to 360 incl. (225)	0.81 (23.1)	1.5	5.2
Over 360 to 5000 incl.(300)	2.12 (60.0)	4.1	13.4

BALDOR®
MOTORS AND DRIVES

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