



INSTRUCTIONS AND SPARE PARTS CATALOG

CONVEYING AND SUCTION MODULE FOR TRULASER 3030 (L20)



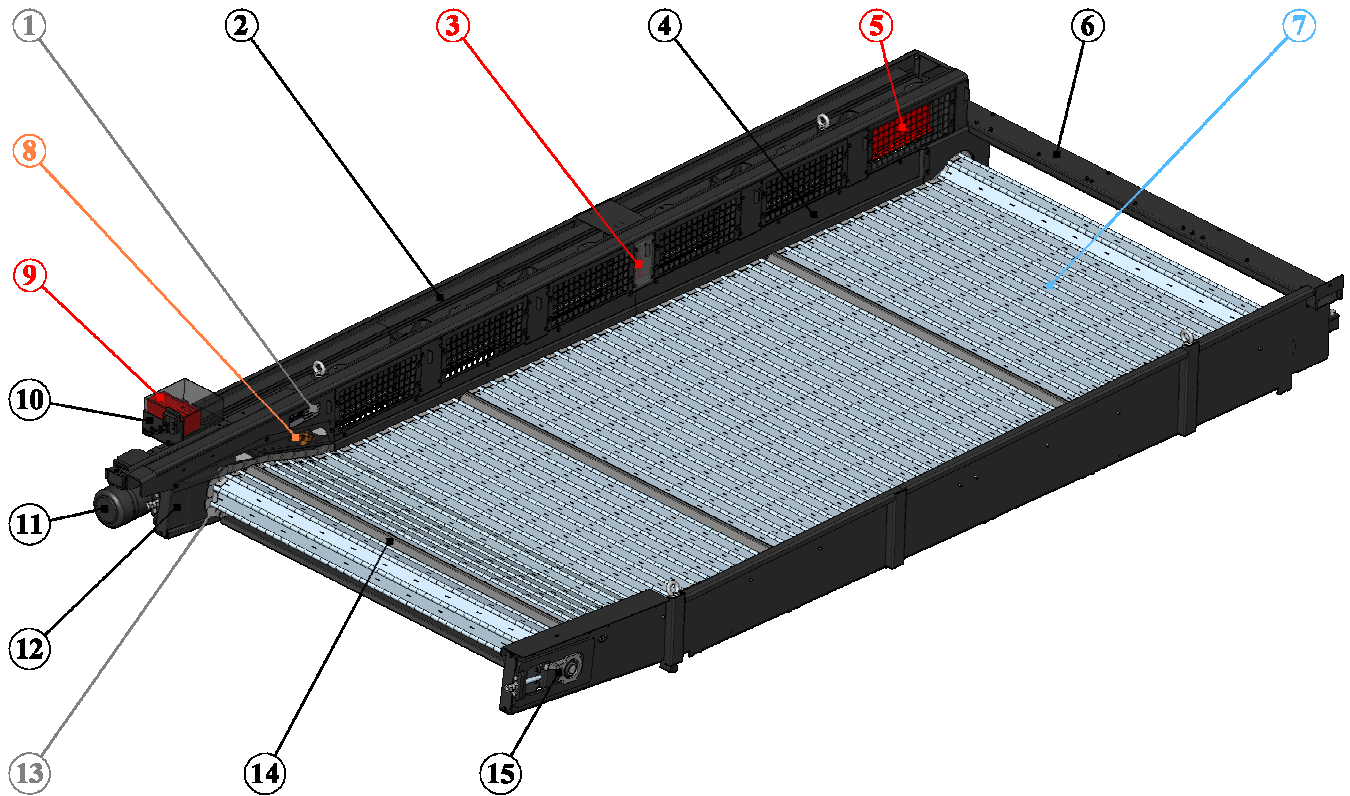
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1 INTRODUCTION

1.1 General information

This document contains the instructions for handling, commissioning and servicing the HENNIG conveying and suction module. It should help you avoid your machine having to be halted and allow you to solve any problems you may encounter with the module.

It is important, therefore, to provide these instructions to people liable to work on the assembly and maintenance of this module.



- | | | |
|---------------------------|------------------------|----------------------------------|
| 1. Identification label | 6. Transversal channel | 11. Gear motor |
| 2. Suction unit | 7. Conveyor belt | 12. Sprocket protection (x2) |
| 3. Actuator (x6) | 8. Lubrication (x2) | 13. Belt wings |
| 4. Right hand skirts (x5) | 9. Distribution unit | 14. Flanged link or Scraper (x5) |
| 5. Suction valve (x6) | 10. ASi terminal strip | 15. Tension system (x2) |

1.2 Instructions for use of the module

This conveying and suction module is designed to transport swarf, slag from LASER cutting and small-sized parts.

This module also provides for the evacuation of the gas and dust particles built up from the cutting. Each suction valve is controlled according to the position of the cutting head.

During the cut, only the valve opposite the cutting head is open. On the transition of the cutting head between 2 compartments, the 2 corresponding valves are open. The suction power is therefore concentrated over one or two compartments (in transition) thereby ensuring optimum suction of the combustion gases and suspended matter.



Do not convey large parts (over 2 kg) on this conveyor. This could damage or jam the belt.

1.3 Guarantees

In compliance with our general conditions of sale, this module is guaranteed solely for hidden defects resulting from the design, material or execution and which occur during the guarantee period.

Similarly, this guarantee only applies to equipment installed according to good professional practice and provided that the purchaser can prove full compliance with the maintenance conditions.

In any event, any fault noted must be reported to HENNIG which undertakes to correct the problem if responsible for it. Wear of spare parts termed "wear parts" does not constitute a fault (see Section 6).

It is pointed out that a certain number of components on the module have their own "manufacturer's" guarantee, such as the actuators, the pneumatic directional control valve, the gear motor, etc.

Therefore, no intervention must be made on our products, apart from servicing operations, without obtaining our agreement.

Important note: Parts termed "wear parts", which are scheduled to be replaced and for which the guarantee does not apply, are excluded from the legal and contractual warranty, except in the case of excessive wear due to a quality fault affecting the part. In case of an exchange under guarantee, replacement of the faulty parts does not prolong the warranty period.

1.4 Safety Instructions



- **Observe the contents of this manual.**
- **Only allow approved electricians to carry out electrical work.**
- **Servicing and repair operations must be entrusted only to qualified staff, trained as required.**
- **Never override the safety devices (for example the motor protection cut-outs). Their operation should always be assured.**
- **Never put your hands into the conveyor system when it is running.**
- **Never walk on the belt while the conveyor is running.**
- **If the conveyor jams, only remove chips or parts with suitable tools (chip shovel) and protective equipment (gloves). The power should be cut off at the main switch for such operations.**
- **Never put your hands inside the suction system (valves and actuators) when the module is in operation.**
- **When servicing the suction channel, only remove dust, swarf or parts with suitable tooling (swarf scoop) and protection equipment (gloves, goggles, etc).**
- **Never take action on the module when in operation and when the control of the machine is connected.**
- **When the operators need to intervene in the neighborhood of the module, it must be suitably illuminated to allow the operators to move and work without any risk of danger, in particular falling.**
- **Non-observance of the safety instructions may result in bodily injury or damage to the equipment.**

1.5 Electrical lock-out of the conveying and suction module



Prior to servicing, module must be properly "Locked Out" per OSHA 29 CFR Part 1910.147



2 TRANSPORT AND HANDLING

The modules are supplied ready for operation.

The module is provided with four rings (see **Figure 1**). These four lifting points must compulsorily be used to transport the module by a crane or other lifting device (see **Figure 2**). Furthermore, four slings specially adapted to the weight of the module (≈ 1400 kg) are to be used.



Do not stand beneath the module when suspended. Mortal danger.
Adhere to the safety and accident prevention instructions.

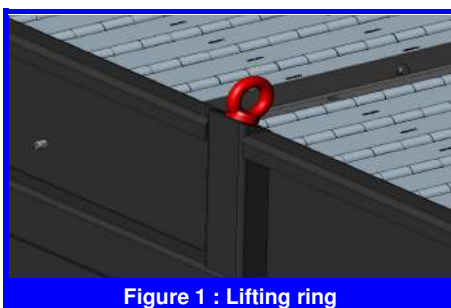


Figure 1 : Lifting ring

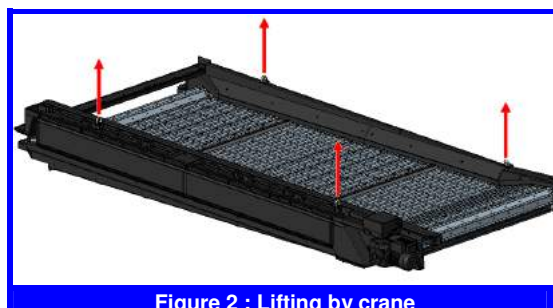


Figure 2 : Lifting by crane

3 COMMISSIONING

3.1 First time start-up

The following checks must be made prior to first time start-up:

3.1.1 General

Check that the module is incorporated into the TRUMPF installation in a workmanlike manner and in accordance with the safety instructions.

Check the tension of the hinged belt. The modules come out of our factory with a belt duly taut. However, the belt can slacken during transport or inspection.

Check the automatic lubrication of the side chains.

Check the electrical connection to your company's installation.

3.1.2 Conveyor drive

The conveyor belt is driven by a helical-bevel gear motor. It is assembled by HENNIG on the right hand side of the conveyor.

This unit is serviced as described in section 5.1.2.

Unless otherwise specified, each drive mechanism comes out of our factory filled with lubricant adapted to the reduction gear and its use. It is, however, worth checking the oil level.

Oil (dripping) at the sealing ring is considered normal during operation.

3.1.3 Suction valves

Each suction valve assembly (6 in total) is previously adjusted in the factory to ensure optimum operation, however, a check must be made to ensure the shutter pivots without local friction or banging. If not, refer to section 4.3.

3.2 Use in normal operation



Do not walk on the conveyor belt when it is in service.

It is essential to make sure that the parts conveyed are loaded evenly on the belt.

3.3 Protection in case of overload

Protection in the event of overload is provided by an electrical component incorporated in the machine electrical cabinet.



Make sure circuit breakers are functioning properly.

3.4 Electrical connections

All electrical connections on the module are ready for installation. All factory installed electrical connectors and AS-I wiring is in compliance with **NFPA 70 and NFPA 79**. All electrical connections **MUST** be carried out by Authorized Trained Personnel in accordance with **OSHA 29 CFR Part 1910.301**.



The conveyors are fitted with a backward operation device.

4 ADJUSTMENTS



For any action on the module, the wearing of personal protection equipment: goggles, dust mask, safety footwear and protective gloves is compulsory in order to protect from any splashes of swarf or dust when cleaning and in order to handle the components and tools required in optimum safety conditions.

Never take action on the module when in operation and when the control of the machine is connected. To do this, perform electrical lock-out of the machine (Section 1.5, page 4).

Maintenance or servicing operations must only be entrusted to qualified staff, trained as required, namely if it is required to be in contact with the moving parts, belts, valves, etc.

4.1 Tension adjustment of conveyor belt

If the belt is not correctly tensioned, the conveyor will not operate in an optimal way. The belt needs to be checked from time to time and the tension adjusted where appropriate. (See Fig. 3)

4.1.1 Check the tension of the conveyor belt

1. Make the belt run backwards for a few centimeters so that no scraper (Item 14, page 3) is vertical to the drive shaft and does not hinder the measurement.
2. Stop the belt and perform electrical lock-out (section 1.5, page 4), so as to prevent the conveyor from suddenly starting.

The measurement « X » shown in **Figure 3 and 3.1** is used to assess the belt tension.

If $X < 2$ mm the belt is too tight, slacken it slightly.

If $X > 4$ mm, the belt needs re-tensioning.

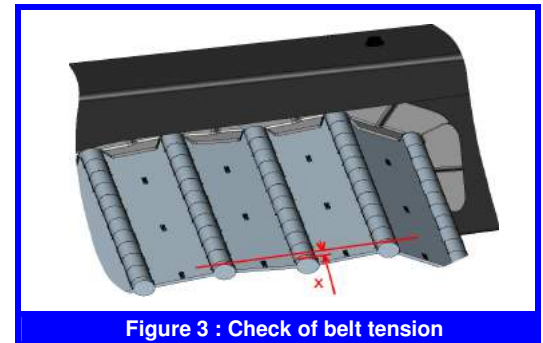


Figure 3 : Check of belt tension



An over-taut belt will give rise to premature wear of the roller tracks.

4.1.2 Adjusting the tension of the conveyor belt

Both sides of the module:

1. Unscrew the lock screw (A) of the tension screw. (Figure 4)
2. Tighten screw (B) to tighten the belt, unscrew to slacken it.



Make sure that the drive shaft remains duly parallel to the end of the casing. To do this, check that dimension (C) is the same on both sides of the conveyor (see Figure 5)

This condition is of prime importance to ensure correct operation of the conveyor

3. Tighten the lock nut (A).
4. Allow the conveyor to run for a few minutes and re-check the tension of the belt as described in Section 4.1.1
If the maximum tension of the belt is reached (the tension system reaches maximum travel), an even number of links should be removed from the belt.

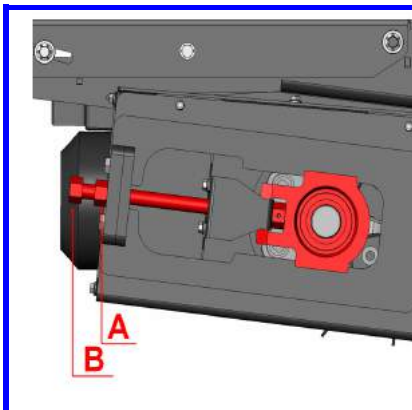


Figure 4 : Tension adjustment

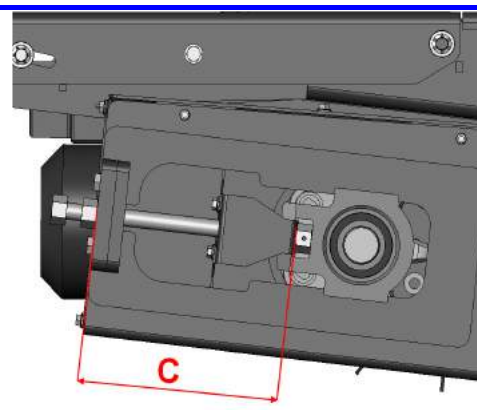


Figure 5 : Inspection dimension

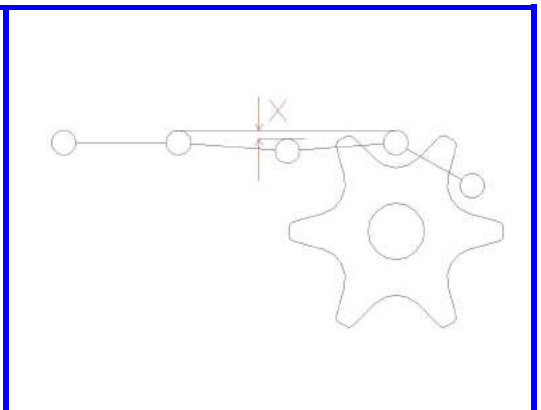


Figure 3.1 : Check of belt tension

Note : Where the tension system gets to the end of its travel, the chain must be shortened. For this, remove an even number of links on the belt and/or chains.

4.2 Centering the conveyor belt

1. Remove the protection plates from the drive sprockets and the skirts, removing the fixing screws (**Figure 6**).
2. Loosen the bearing set screws preventing displacement of the drive shaft.
3. Center the belt or the scrapers by moving the drive shaft laterally with a mallet. The chains should be positioned at an equal distance on each side of the conveyor as shown in the diagram. (**Figure 7**).
4. Tighten the set screws on shaft.
5. Replace all guard plates in their respective positions.

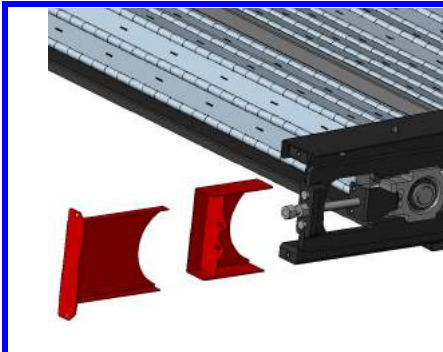


Figure 6 : Sprocket protection

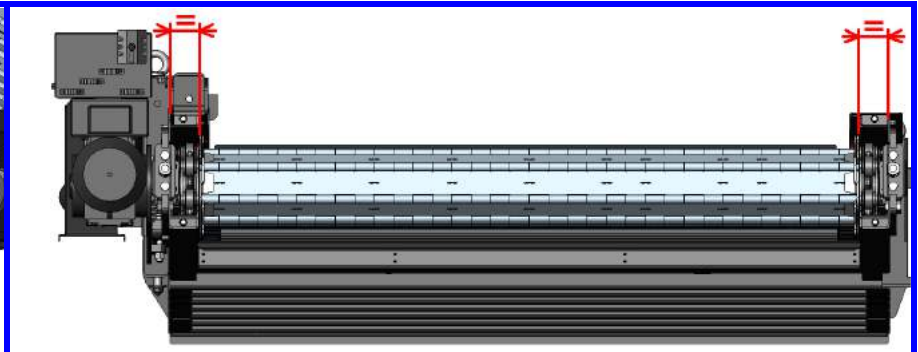


Figure 7 : Centering of belt

4.3 Adjusting the stops

A system of adjustable stops is provided to ensure optimum operation of the suction shutters (correct sealing and noiseless operation).

The stop adjustment system is accessed after removing the protection grid of the valves, to do this, unscrew the 4 fixing screws holding this then lift it up by approximately 15 mm and pull it towards you (**Figure 8**)

The adjustment is made via the 2 hexagonal head screws.

Unscrew screws (**D**) slightly in order to release the stops then adjust the position of the stops (**Figure 9**).

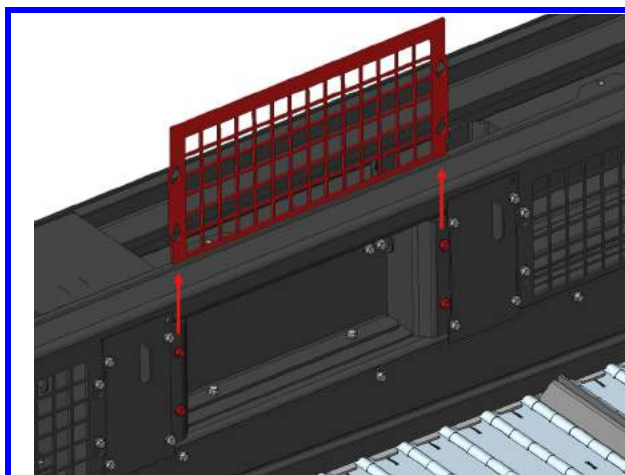


Figure 8 : Access to adjustable stops

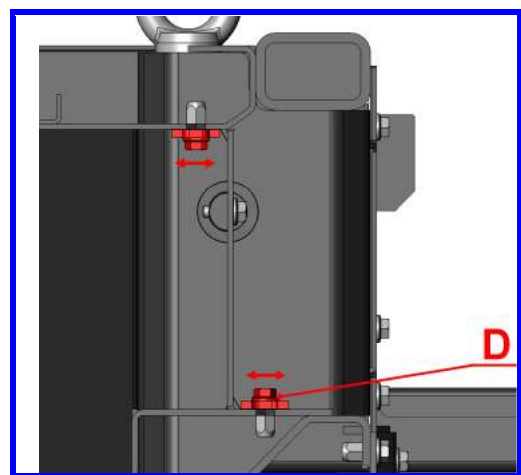


Figure 9 : Stop adjustment

5 MAINTENANCE OF THE MODULE



For any action on the module, the wearing of personal protection equipment: goggles, dust mask, safety footwear and protective gloves is compulsory in order to protect yourself from any splashes of swarf or dust when cleaning and in order to handle the components and tools required in optimum safety conditions.

Never take action on the module when in operation and when the control of the machine is connected. To do this, perform electrical lock-out of the machine (Section 1.5, page 4).

Maintenance or servicing operations must only be entrusted to qualified staff, trained as required, namely if it is required to be in contact with the moving parts, belts, valves, etc.

5.1 Maintenance

Maintenance summary (for use in one shift):

| Component | Actions | Frequency (hours) | | | | |
|--------------------|---|-------------------|-----|-------|-------|--------|
| | | 40 | 500 | 1.000 | 5.000 | 10.000 |
| Conveyor belt | <ul style="list-style-type: none"> Cleaning and light oiling* of conveyor belt Check of drive bars and side edges Emptying the bin(s) of slag and small parts (see 5.1.1) | x | | | | |
| | <ul style="list-style-type: none"> Lubrication of side chains Check of lubrication of chains | | x | | | |
| | <ul style="list-style-type: none"> Check of tension of belt and re-tensioning if required Check and centering of conveyor belt | | | x | | |
| | <ul style="list-style-type: none"> Change of lubrication brushes | | | | x | |
| Suction channel | <ul style="list-style-type: none"> Cleaning of protection guards of the grids Check of wear and change if required | x | | | | |
| | <ul style="list-style-type: none"> Cleaning of suction valves and check of operation, adjustment if required. | x | | | | |
| | <ul style="list-style-type: none"> Check of suction channel and cleaning. | | x | | | |
| General inspection | <ul style="list-style-type: none"> Change of all drive and return bearings Change of drive shaft with sprockets (depending on wear of chain sprockets) Search for formation of rust on conveyor casing/rework Complete cleaning of conveyor casing Check of wear of roller guides and rework if required Check of screw connections Check of wear of belt conveyor, change of faulty parts | | | | | x |

* HENNIG recommends the use of **LAMSON A-111-B** protection oil on these conveyor belts in order to fight against corrosion and facilitate subsequent cleaning.

Tip: check the oil level of the gear motor regularly.

5.1.1 Emptying the waste bins

The emptying of the waste bins on the return (E) and unloading (F) should this happen, must be performed regularly to avoid jeopardizing the operation of the conveyor (Figure 10).

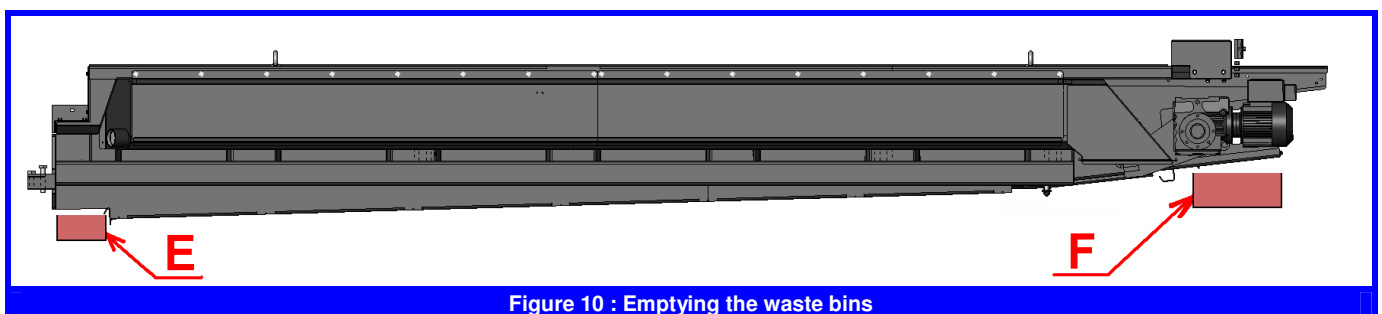


Figure 10 : Emptying the waste bins

5.1.2 Servicing the drive mechanism

For optimal operation, the accumulation of dust, slag and dirt on the geared motor drive is to be avoided. The openings in the hood and the cooling fins are important elements of the motor. Make sure that they remain clean.

The main maintenance required on the gear motor is to check the oil level on a regular basis. The instructions for checking the lubricant level are described in Section 5.1.2.3

Note: The presence of oil around the sealing ring should be considered normal during operation.



5.1.2.1 Oils

Unless otherwise specified, each drive mechanism comes out of our factory filled with lubricant adapted to the type of reduction gear, its assembly position and its use. Refer to the lubricants chart for NORD gear motor in section 5.1.2.2 for the use of other oils or greases.

The bearings of the reduction gears and motors are filled at the factory with greases indicated in section 5.1.2.2

5.1.2.2 Chart of lubricants for NORD gear motor

Abbreviations used, meaning of shaded areas and notes:

- CLP = Mineral oil
- CLP HC = Synthetic hydrocarbon
-  = Synthetic lubricant (= grease for synthetic bearing)
-  = Mineral lubricant (= grease for mineral bearing)

Take care: Synthetic and mineral lubricants must not be mixed! This also applies when reprocessing lubricants!

| Umgebungstemp. Ambient temp. Temp. ambiante |  |  |  |  |  |  |  |  |
|---|--|--|--|---|---|--|---|--|
| Schneckengetriebe 0 ... 40°C ISO VG 680 | Degol BG 680 Degol BG 680 plus | -- | Alpha SP 680 | Spartan EP 680 | Renolin CLP 680 CLP 680 Plus | Klüberoil GEM 1-680N | Mobilgear: - 636 - XMP 680 | Shell Omala 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 | Spartan EP 220 | Renolin CLP 220 Renolin CLP 220 Plus | Klüberoil GEM 1-220N | Mobilgear 630 Mobilgear XMP 220 | Shell Omala 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 | Spartan EP 100 | Renolin CLP 100 Renolin CLP 100 Plus | Klüberoil GEM 1-100N | Mobilgear: - 627 - XMP 110 | Shell Omala 100 |
| ISO VG 15 - 45 ... - 15°C* | Vitamol 1010 | Bartran HV 15 | Hyspin AWS 15 Hyspin SP 15 Hyspin ZZ 15 | Univis J13 | Renolin B 15 HVI | ISOFLEX MT 30 ROT | Mobil DTE 11 M | Shell Tellus T 15 |
| Schneckengetriebe -5 ... 60°C ISO VG 680 | Degol GS 680 | Energol SG-XP 680 | -- | -- | Renolin PG 680 | Klübersynth GH 6-680 | Glygoyle HE 680 | Shell Tivela S 680 |
| ISO VG 220 -25 ... 80°C* | Degol GS 220 | Energol SG-XP 220 | Alphasyn PG 220 | Glycolube 220 | Renolin PG 220 | Klübersynth GH 6-220 | Glygoyle HE 220 | Shell Tivela S 220 |

Figure 11 : Lubricants - NORD gear motor









| Schmierstoffarten für Wälzlager / Type of lubricant for anti friction bearings / Type de lubrifiant pour roulements à rouleaux | | | | | | | | | |
|--|---|---|---|---|--|---|---|---|---|
| Schmierstoffart Type of lubricant Type de lubrifiant | Umgebungstemp. Ambient temp. Temp. ambiante |  |  |  |  |  |  |  |  |
| Fett (Mineralölbasis) Grease (mineral oil basis) | - 30 ... 60°C (normal) | Aralub HL 2 | Energrease LS 2 | Spheerol AP 2 LZV-EP | Mehr-zweckfett Beacon2 | Renolit FWA 160 | Klüberplex BEM 41-132 | Mobilux 2 | |
| Graisse (base huile minérale) | * - 50 ... 40°C | Aralub SEL 2 | -- | Spheerol EPL2 | -- | Renolit JP 1619 | -- | -- | Shell Alvania RL 2 |
| Synthetisches Fett Synthetic grease Graisse synthétique | * - 25 ... 80°C | Aralub SKL 2 | -- | Product 783/46 | Beacon 325 | Renolit S 2 Renolit HLT 2 | ISOFLEX TOPAS NCA 52 PETAMO GHY 133 N | Mobiltemp SHC 32 | Aero Shell Grease 16 oder 7 |

Figure 12 : Greases for bearings - NORD gear motor

5.1.2.3 Level and quantity of lubricant



The reduction gears and the oil of the reduction gears can heat up significantly. Watch out for burns! Serious injuries.

NORD gear motor :

The oil level of the gear motor is checked using the level gauge cap as described in **Figure 13**.

The SK 9012.1 gear motor in position M3 H2/B5III requires approximately 1.9 litres of oil (**Figure 13**). The NORD manufacturer's standard lubricant is Klüblersynth GH 6 - 220 synthetic oil (**Figure 11**). This gear motor is designed to run horizontally.

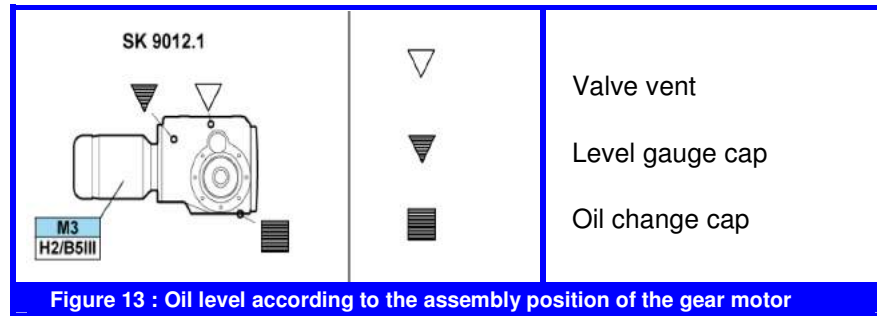


Figure 13 : Oil level according to the assembly position of the gear motor

5.1.3 Servicing the belt

5.1.3.1 Cleaning / Oiling the belt

Every 40 hours of operation, the conveyor belt must be cleaned then oiled. The cleaning and oiling operations take place as follows :

1. Cleaning of the top part of the belt using a brush or an industrial vacuum cleaner
2. Run the belt forwards until the lower area of the belt to be cleaned appears.
3. Clean the new area of the belt with a brush or industrial vacuum cleaner.
4. Run the belt forwards for a few minutes to evacuate any residue.
5. Apply oil to the top part of the belt with a wide paint brush or a brush.
6. Run the belt forwards until the lower area of the belt to be oiled appears.
7. Apply oil to the new area of belt with a wide paint brush or a brush.

HENNIG recommends the use of **LAMSON A-111-B** protection oil on these conveyor belts in order to facilitate subsequent cleaning and fight against corrosion.

5.1.3.2 Lubrication of chains

Check for the correct lubrication of the side chains every 500 hours of operation. These chains must never be dry. If the automatic lubrication is faulty. Call the service center, a spare lubrication kit is provided, refer to Section **6.4**. The manufacturer recommends the use of **ASEOL**, lubrication oil, reference **TOPSLIDE A**.

5.1.3.3 Adjusting the tension and centering the belt

The side chains are subjected to stress. It is not unusual for them to extend over time. Chains that are over or under-taut lead to incorrect operation of the conveyor and premature wear. As a consequence the belt tension should be checked every 1,000 hours. Retighten if required. Adhere to the instructions of Sections **4.1** and **4.2** to perform this operation.

5.1.3.4 Changing the belt

When the belt shows obvious signs of wear that could compromise the correct operation of the conveyor, it must be changed.

Spare belts are supplied to you in one piece with a connecting link provided with removable couplers (see paragraph **6.3**). A set of 2 insertion rollers is required when assembling the belt in the conveyor (**Figure 14**).

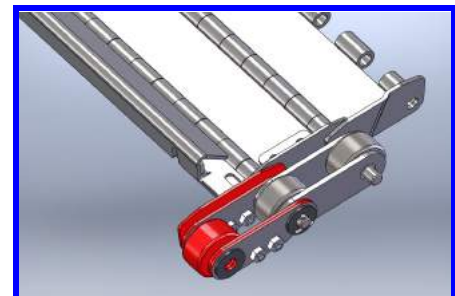


Figure 14 : Insertion roller

Removing the belt

1. Allow the conveyor to run until one of the 5 flanged connecting links arrives near the gear motor drive (making it easier to access the removable parts of the belt).
2. Remove the protections from the drive sprockets as well as the protective covers and lubricator system assemblies by unscrewing the respective screws either side. (**Figure 15 & Figure 16**)
3. In order to uncouple the belt and be able to take it out, unscrew the connecting link by removing the 5 screws (**G**) (**Figure 21**), swivel the two half links then release the removable link by removing the 4 screws (**H**) (**Figure 20**)



Figure 15: Protections (left-hand side)

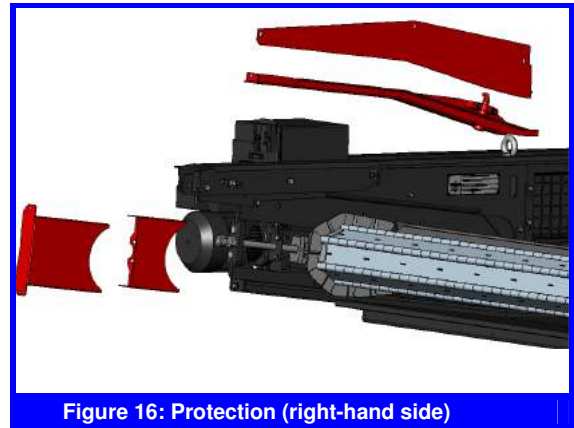


Figure 16: Protection (right-hand side)

Comment: If the belt is completely blocked, remove the skirts and the wing protections either side of the belt (**Figure 17**) to have complete access to the chains and thereby be able to free the belt.

The conveyor belt is designed so that there are always at least two removable belt flanges accessible from the top.

It is thus possible to remove the belt in parts using a hoist or other handling appliance.

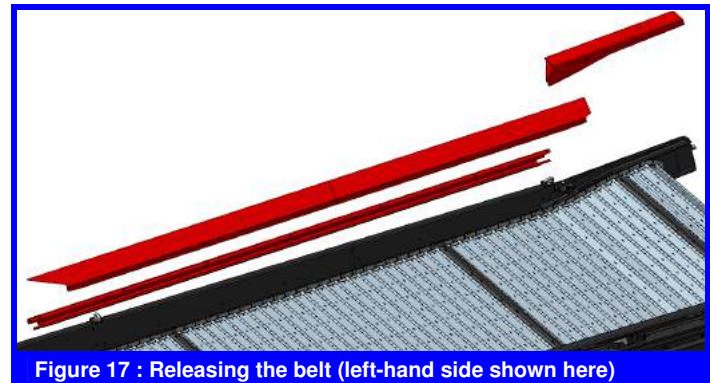


Figure 17 : Releasing the belt (left-hand side shown here)

Inserting the belt

1. Engage the belt, the insertion roller assembly end, in the drive area, on the bottom rails until the sprockets drive the belt.



Direction of belt fitting.

When putting the belt on the lower rail, the reinforcements on the underside of the conveyor plates should be uppermost!

The side fins should be underneath so that the belt moves in the direction shown in Figure 18.

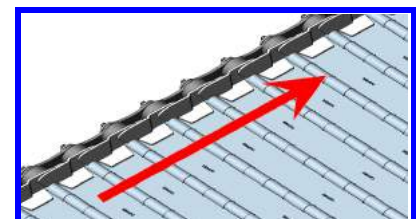


Figure 18 : Running direction of belt

2. Allow the belt to run until the connecting link arrives in the drive area.
3. The return area is designed so that the belt goes up without any action. You are nonetheless advised to allow the gear motor to run with precaution in this area.



Risk of injury:

Keep fingers away from the belt when turning.

If the belt jams when fitting, stop the motor straight away. Help the belt where necessary using a suitable tool (hook, pliers, etc.).

Closing the belt

The belt is closed using a flanged link. This link is fitted with a removable chain coupler. **Figure 20** shows the assembly of a coupler with the two ends of the chain.

The belt is closed in the following order:

1. Drive the belt forward using the gear motor drive until the two ends of the belt are close (**Figure 19**).
2. Connect the ends of the chains with the removable couplers (**Figure 20**).
3. Lock the assembly with the 4 lock screws (**H**).
4. Clamp the connecting link with the 5 screws (**G**) in order to close the belt (**Figure 21**).
5. Adjust the tension of the belt. Refer to section 4.1.2 to do this.



Figure 19 : Closing the belt

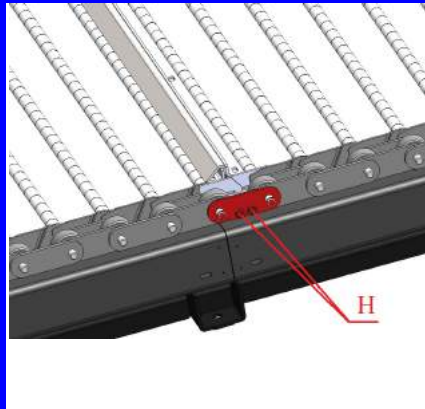


Figure 20 : Removable coupler

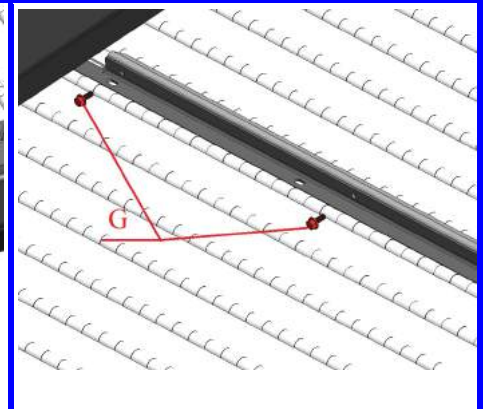


Figure 21 : Clamping the link

5.1.4 Servicing the suction part

For optimum operation of the conveying and suction module, it is essential to prevent the build up of dust, slag and other dirt in the suction channel. Every 40 hours of operation, clean the doors and suction channel with a brush or industrial vacuum cleaner and visually check the shutters in order to detect any deformations.

5.1.4.1 Servicing the actuators

The actuators are key components of the conveying and suction module which must be carefully monitored in order to ensure they operate correctly. The main servicing operations required on the actuators are regular checks of the pneumatic wiring and cleaning of the actuators.

| Fluid | Recommended Oil | Ambient temperature |
|----------------------------------|-----------------|---------------------|
| Filtered air with no lubrication | - | 32 °F ... + 176 °F |
| Filtered, lubricated air | ISO VG 32 | 32 °F ... + 176 °F |



In the event of use with lubricated air, you are advised to never stop the lubrication.

5.1.4.2 Servicing the bearings

Apart from regular cleaning of the bearings these do not require any particular attention.

| | |
|---|-------------------|
| Working temperature | 41 °F ... 158 °F |
| Temperature authorized for the material | -40 °F ... 176 °F |

5.1.4.3 Servicing the ASi directional control valve

Apart from regular cleaning of the directional control valve, this does not require any particular attention.

| Technical data | |
|---------------------|-------------------|
| Ambient temperature | 23 °F ... 122 °F |
| Voltage | 24V DC -10%...15% |
| Power input | 0.8 W per coil |

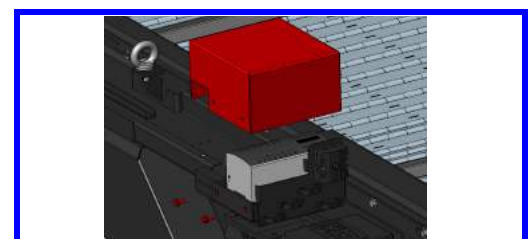


Figure 22 : Access to directional control valve

5.1.4.4 Dismantling/Reassembling the suction valves

The complete dismantling of a suction valve is performed in the following order:

1. Remove the protective grid from the valves by slightly unscrewing the hexagonal head screws (4 per grid) (**Figure 8**).
2. Take down the respective actuator cover(s) by removing the hexagonal head screws (4 per cover).
3. Unscrew the screws holding the shutter in position then remove it (**Figure 24**).
4. Remove the valve guide shaft from the bearing opposite the actuator (**Figure 24**).
5. For the drive shaft of the shutter, unclip the yoke from the actuator to free the connecting rod, then remove the shaft.
6. Take out the smooth bearings from their housing if required.
7. For reassembly, proceed in reverse order to dismantling as described above.



When assembling the suction valves, be particularly careful to align the guide and drive shafts to ensure operation without jamming. (Figure 23)

In the event of a change of actuator, the length of the actuator rod may need to be adjusted so that the shutter closes completely.

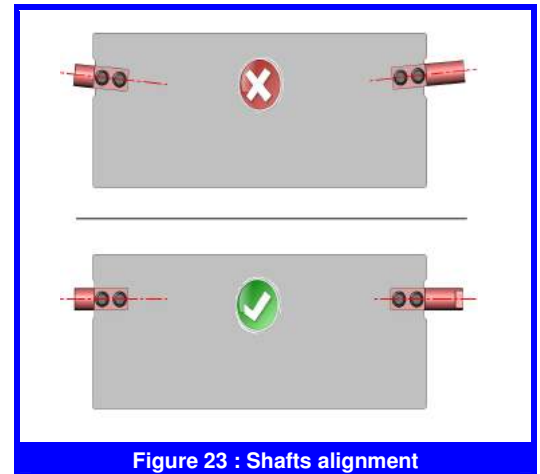


Figure 23 : Shafts alignment

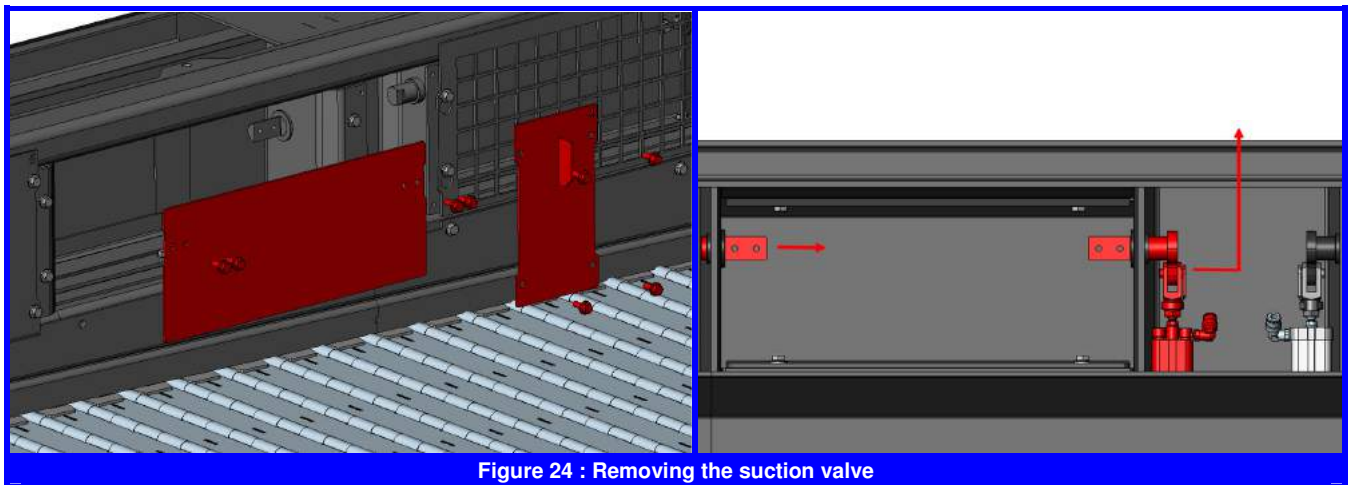


Figure 24 : Removing the suction valve

5.1.5 Servicing the conveying and suction module

Laser cutting machining generates abrasive elements called slag which can form an abrasive layer harmful to the operation of the module if cleaning is not conducted on a regular basis. The conveyor belt, the channels, the suction valves and the housing of the module therefore require careful cleaning as per **5.1 Maintenance schedule**.

During this work, change any parts showing signs of wear such as the sprockets, bearings and return shaft, bearings and drive shaft, guide rails and skirts, chains and conveyor belts, bearings, shafts, actuators and valves of the suction system (see lists of spare parts Section 6).

Any rust appearing on the conveyor housing should be repaired.

5.2 Shut-down of conveyor

The conveyor may be shut down for short periods of time. This does not require specific measures.

However, if the conveyor should be left idle for a long time, it must be thoroughly cleaned and a protective treatment applied. HENNIG recommends the use of the **LAMSON A-111-B** protection oil.

5.3 Possible incidents

| Incident | Likely cause | What to do |
|---|---|--|
| The conveyor is struggling although no part seems to be jamming it. | The belt is not sufficiently tensioned. | Check and adjust the belt tension. Refer to section 4.1 |
| The belt is jammed. | Presence of parts which are incompatible with the conveyor's capabilities | Move the conveyor backwards in steps. If this method does not work, the belt will need to be removed, see 5.1.3.4 |
| The side fins are worn. | The belt is not parallel to the casing | Tighten and re-center the belt as per Section 4.1 to 4.2, and make sure that the belt remains parallel to the casing. |
| The geared motor drive heats up. | Lack of oil in the geared motor drive | Add more oil to the geared motor drive. |
| A valve is blocked | The actuator does not work | Check the actuator is correctly supplied (condition of supply pipes, etc.) |
| | Presence of parts blocking the shutter | Remove the part(s) blocking the shutter. Refer to section 5.1.4 |
| All the valves are blocked. | Pneumatic problem | Check for the correct operation of the directional control valve. Check that the directional control valve is correctly supplied with air and electricity |

For the correct operation of the conveyor, it must be allowed to run non-stop, even if the machine no longer produces swarf or scrap.

6 SPARE PARTS

To speed up any enquiry or order you wish to make, you are asked to write down the TRUMPF identification no. and the data on the identification label affixed close to the slope of the slide rail, on the right hand side (Item #1, page 3).

The parts lists below are provided for you to identify your requirements and to forward them to us correctly.

The spare parts of the module are broken down into 7 sub-assemblies:

- Sub-assembly 1 : Drive unit (6.1)
- Sub-assembly 2 : Return unit (6.2)
- Sub-assembly 3 : Belt (6.3)
- Sub-assembly 4 : Lubrication (6.4)
- Sub-assembly 5 : Distribution unit (6.5)
- Sub-assembly 6 : Casing components (6.6)
- Sub-assembly 7 : Suction unit (6.7)



Figure 25 : Identification label

For each of these sub-assemblies, the following paragraphs describe :

- the sets uses
- the quantities
- the identification of these sets
- the assembly of sub-assemblies

6.1 Sub-assembly 1: Drive unit

| TRUMPF identification Number | Order qty | Denomination | Qty per Module |
|------------------------------|-----------|---------------------------------|----------------|
| 1658463 | 1 | NORD gear motor | 1 |
| 1659510 | 1 | NORD torque arm | 1 |
| 1773961 | 1 | NORD drive shaft with sprockets | 1 |
| 1773955 | 2 | Drive bearing | 2 |
| 0384319 | 2 | Tension system | 2 |

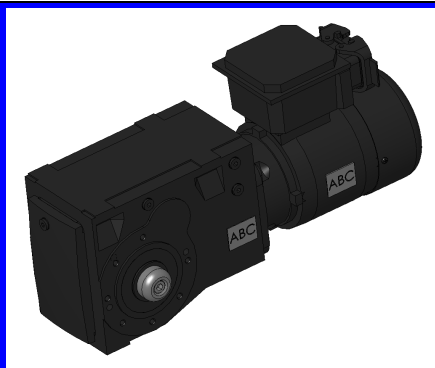


Figure 26 : 1658463 - NORD gear motor

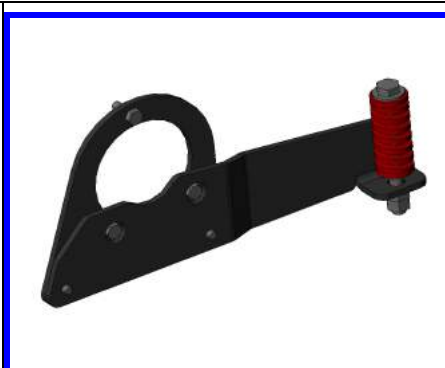


Figure 27 : 1659510 - NORD torque arm

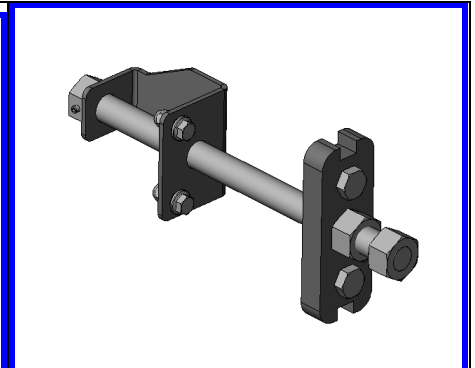


Figure 28 : 0384319 - Tension system

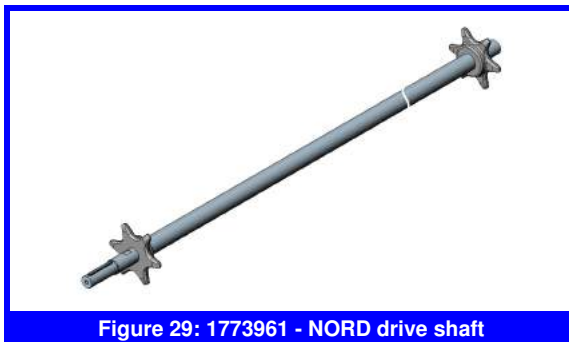


Figure 29: 1773961 - NORD drive shaft

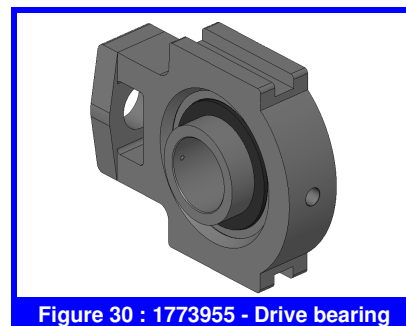


Figure 30 : 1773955 - Drive bearing

6.2 Sub-assembly 2: Return unit

| TRUMPF identification number | Order qty | Denomination | Qty per Module |
|------------------------------|-----------|-----------------------------|----------------|
| 1774507 | 1 | Return shaft | 1 |
| 1775364 | 1 | Return bearing and sprocket | 2 |

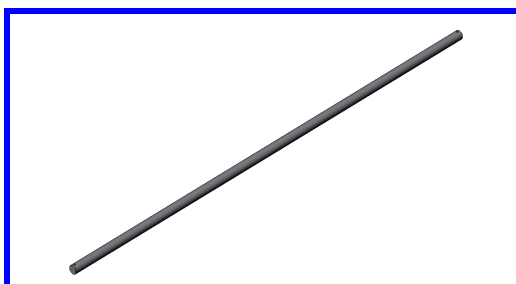


Figure 31 : 1774507 – Return shaft

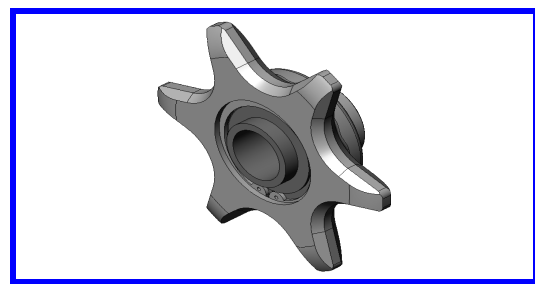


Figure 32 : 1775364 – Return bearing and sprocket

6.3 Sub-assembly 3: Belt

| TRUMPF identification number | Order qty | Denomination | Qty per Module |
|------------------------------|-----------|-------------------|----------------|
| 1773981 | 1 | Belt assembly | 1 |
| 1773944 | 1 | Link with scraper | 5 |

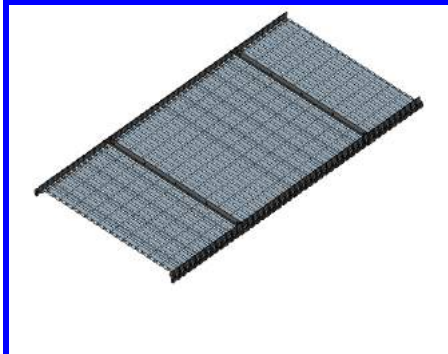


Figure 33 : 1773981 - Complete Belt



Figure 34 : 1773944 - Link with scraper

6.4 Sub-assembly 4: Lubrication

| TRUMPF identification number | Order qty | Denomination | Qty per Module |
|------------------------------|-----------|------------------|----------------|
| 0384333 | 2 | Brush lubricator | 2 |
| 0384334 | 2 | Lubricator clamp | 2 |

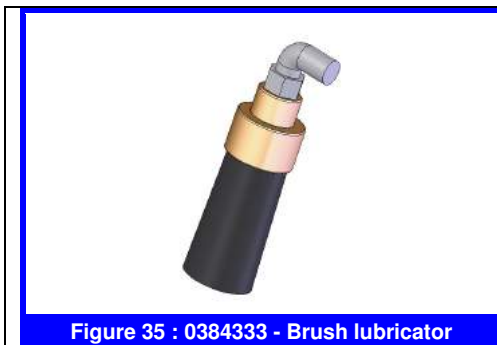


Figure 35 : 0384333 - Brush lubricator

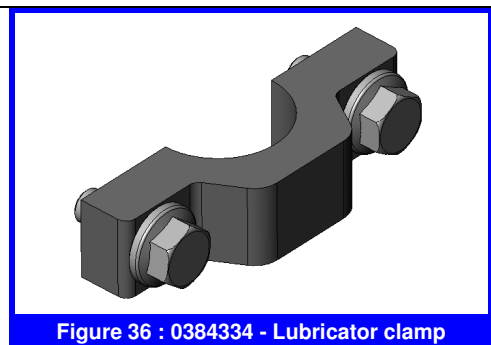


Figure 36 : 0384334 - Lubricator clamp

6.5 Sub-assembly 5: Distribution unit

| TRUMPF identification number | Order qty | Denomination | Qty per Module |
|------------------------------|-----------|--|----------------|
| 0384314 | 1 | ASi Directional control valve | 1 |
| 1548263 | 1 | ASi terminal strip and cables X-TEC 32 | 1 |

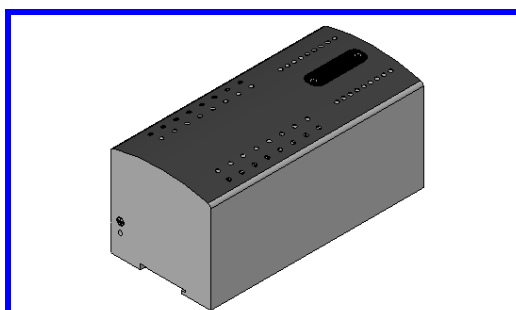


Figure 37 : 0384314 - ASi directional control valve

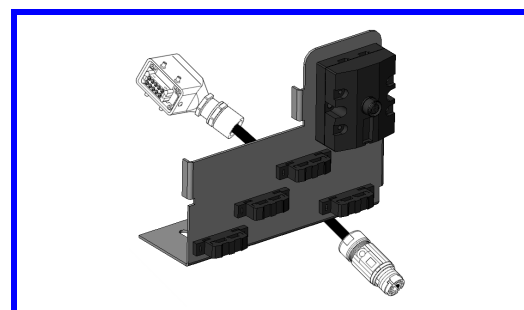


Figure 38 : 1548263 - ASi terminal strip and cables

6.6 Sub -assembly 6: Casing components

| TRUMPF identification number | Order qty | Denomination | Qty per Module |
|------------------------------|-----------|---|----------------|
| 1773994 | 1 | Right hand skirt and holder kit (5 parts) | 1 |
| 1773982 | 1 | Left hand skirt and holder kit (7 parts) | 1 |
| 0384327 | 1 | Channel cover kit (2 parts) | 1 |
| 0384328 | 2 | Suction Tunnel Cover | 2 |
| 0384329 | 1 | Directional control valve cover | 1 |
| 1774013 | 2 | Sprocket protection | 2 |
| 0384331 | 1 | Cover plate for gratings | 1 |
| 0384332 | 1 | Machine frame cover plate | 1 |

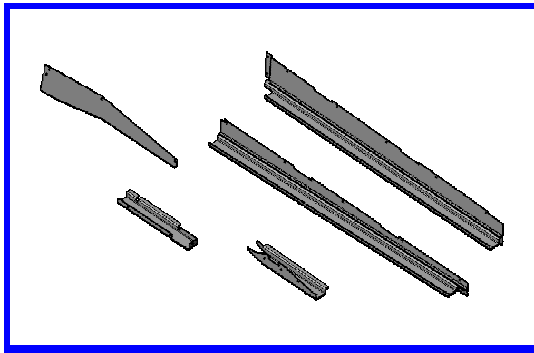


Figure 39 : 1773994 - Right hand skirts and holders

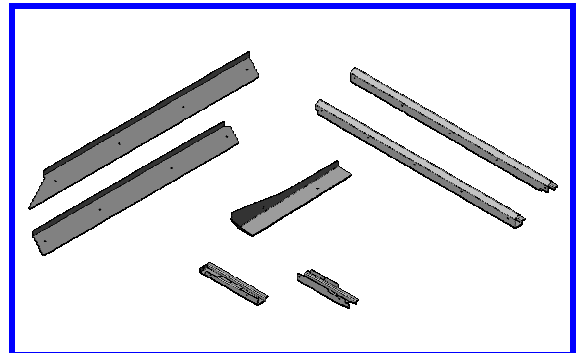


Figure 40 : 1773982 - Left hand skirts and holders

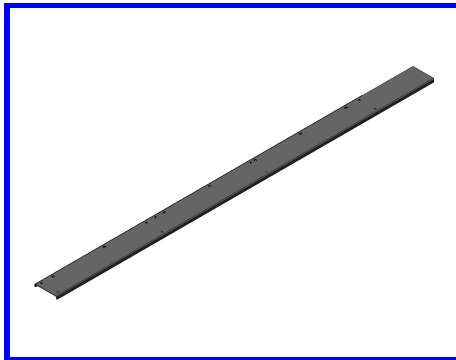


Figure 41 : 0384327 - Channel cover kit

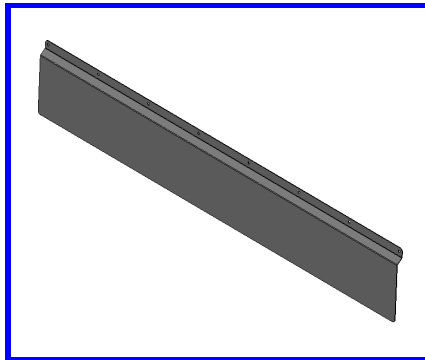


Figure 42 : 0384328 - Suction Cover

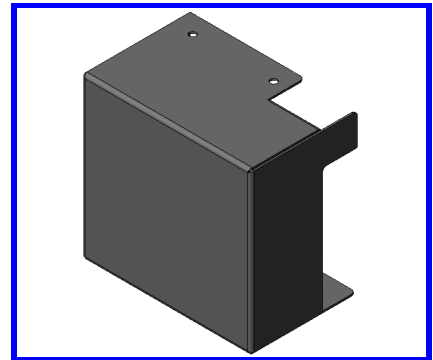


Figure 43 : 0384329 - Valve cover

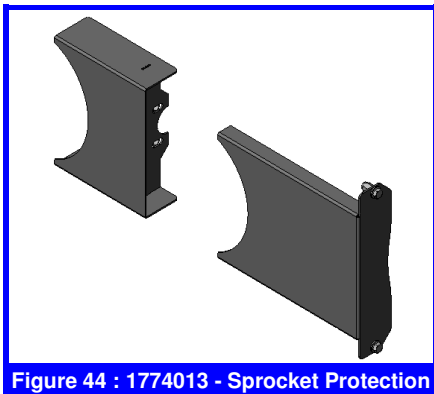


Figure 44 : 1774013 - Sprocket Protection

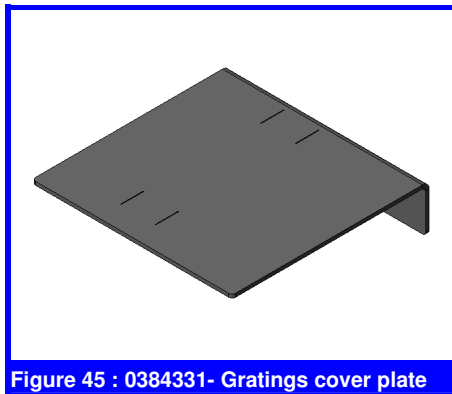


Figure 45 : 0384331- Gratings cover plate

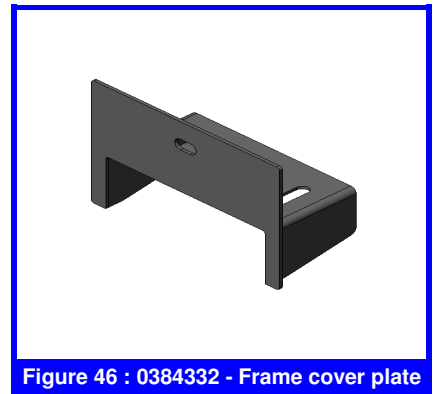


Figure 46 : 0384332 - Frame cover plate

6.7 Sub -assembly 7: Suction unit

| TRUMPF identification number | Order qty | Denomination | Qty per Module |
|------------------------------|-----------|----------------------------|----------------|
| 0384308 | 1 | Actuator assembly | 6 |
| 1775395 | 6 | Flap guide shaft | 6 |
| 1775397 | 6 | Flap drive shaft | 6 |
| 0384313 | 12 | Flap Bearing | 12 |
| 0384306 | 1 | Suction Flap | 6 |
| 1659507 | 1 | Flap Stop 2 x M6 riveted | 12 |
| 0384307 | 1 | Kit of covers + seals (x5) | 1 |
| 0384311 | 1 | Flap Grid | 6 |



Figure 47 : 0384308 - Actuator assembly

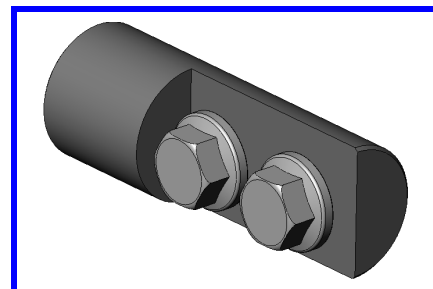


Figure 48 : 1775395 - Flap guide shaft

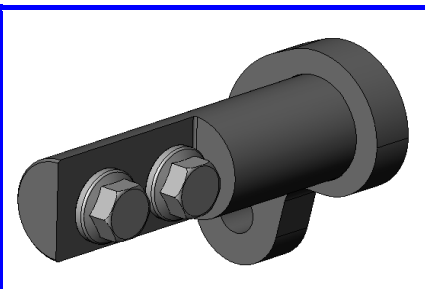


Figure 49 : 1775397 - Flap drive shaft



Figure 50 : 0384313 - Flap Bearing

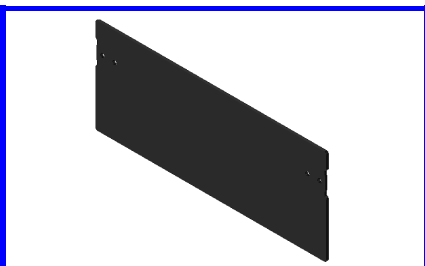


Figure 51 : 0384306 - Suction Flap

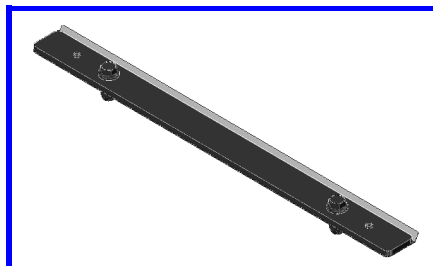


Figure 52 : 1659507 - Flap Stop 2 x M6

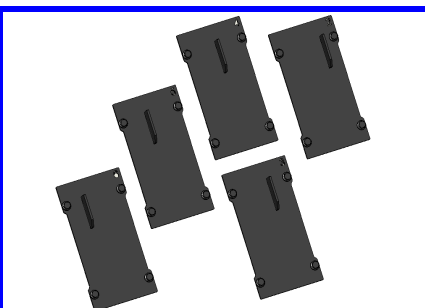


Figure 53 : 0384307 - Kit of covers

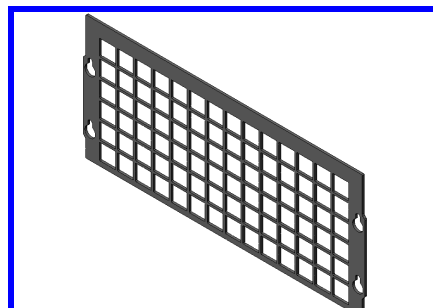
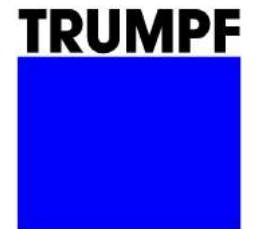


Figure 54 : 0384311 - Flap Grid



ORDER FORM

From / Customer number:

TRUMPF Inc.
111 Hyde Road
Farmington, CT 06032
Telephone: 1-866-887-7278
Fax: 1-860-255-6887
Email: info@us.trumpf.com
Web: www.us.trumpf.com

| Pos. | Identification No. | Description | Quantity | Unit Price (\$) |
|------|--------------------|-------------|----------|-----------------|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |

Customer:

Your order No.:

Machine type:

Machine No.:

Date of order:

Partial supply: Yes
 No

Date of delivery:

Comments:

Worldwide Headquarter:

Hennig Inc.

9900 N. Alpine Road
Machesney Park, IL 61115

Phone: +1 815 636 9900

Fax: +1 815 636 9737

Email: info@hennig-inc.com

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