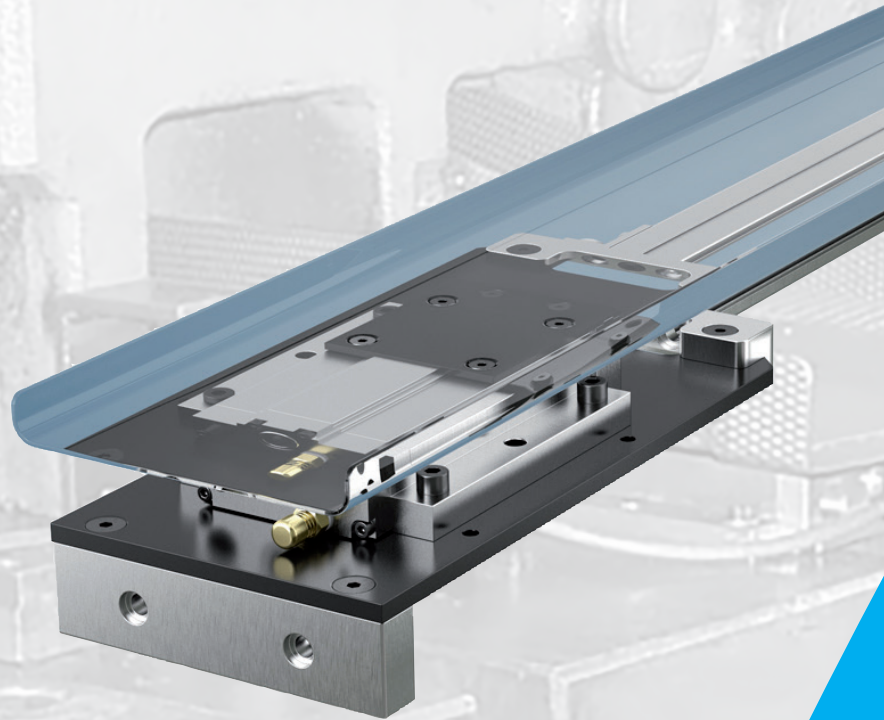


**PNEUMATIC PART CONVEYOR
SN9810-TG
OPERATING INSTRUCTIONS**



STRACK®

NORMALIEN

Operating instructions SN 9810-TG-1000 Pneumatic part conveyor

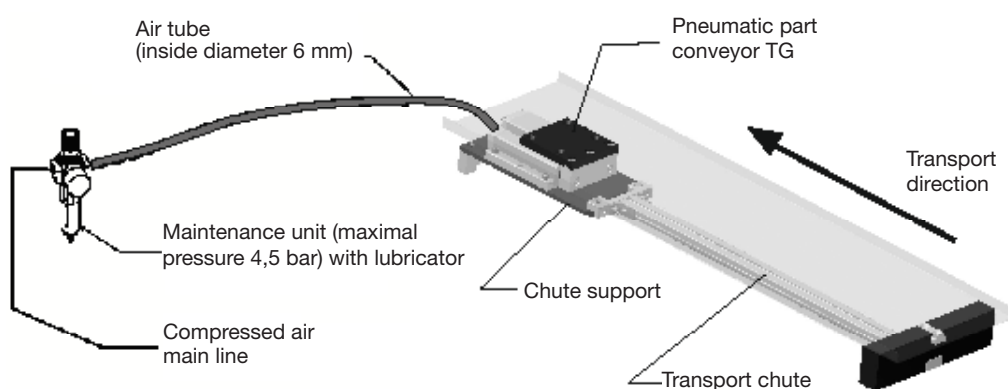
Intended use:

The pneumatic part conveyor TG is exclusively intended for the industrial use. Any use in the non-commercial sector is expressly prohibited. Several parts, in particular punching parts are transported by the pneumatic part conveyor by means of a screwed transport chute. The conveyor utilizes the surface friction of the parts to be transported and the surface friction of the transport chute.

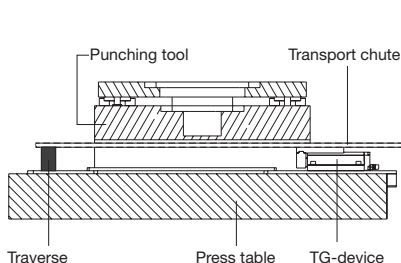
The device works with regulated compressed air and needs a transport chute, a chute support which is stable enough and a compressed air connection adjustable on 3,9 to maximal 4,5 bar with maintenance unit.

The transport direction is always in the direction of the air connection side.

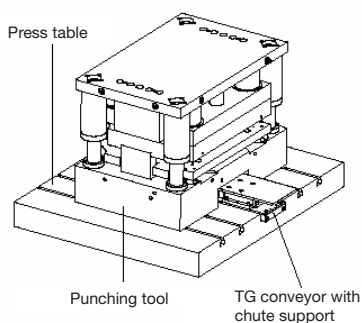
The following graphic explains the construction



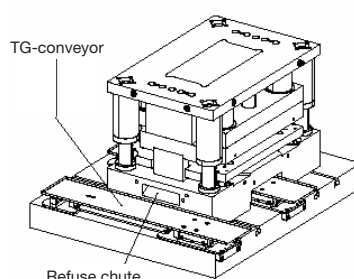
Examples of application:



Cutout through a punching tool with refuse chute and TG-conveyor with chute support.



Stamping waste parts are transported out of the refuse chute and led off to the scrap chute.



Stamping waste parts are transported to the scrap chute laterally to the tool.

The transport performance is basically depending on the surface condition of the parts to be transported, the surface condition of the transport chute or the adjusted stroke frequency.

The transport performance of the TG-1000 is maximally 180 N with chute support.

To avoid the risk of tool breakage or other damages at a standstill of the conveyor during the automatic manufacturing process, a standstill monitoring for the device must be provided which gives a signal to the machine control at disturbances or failure of the device to trigger an automatic stop of the machine.

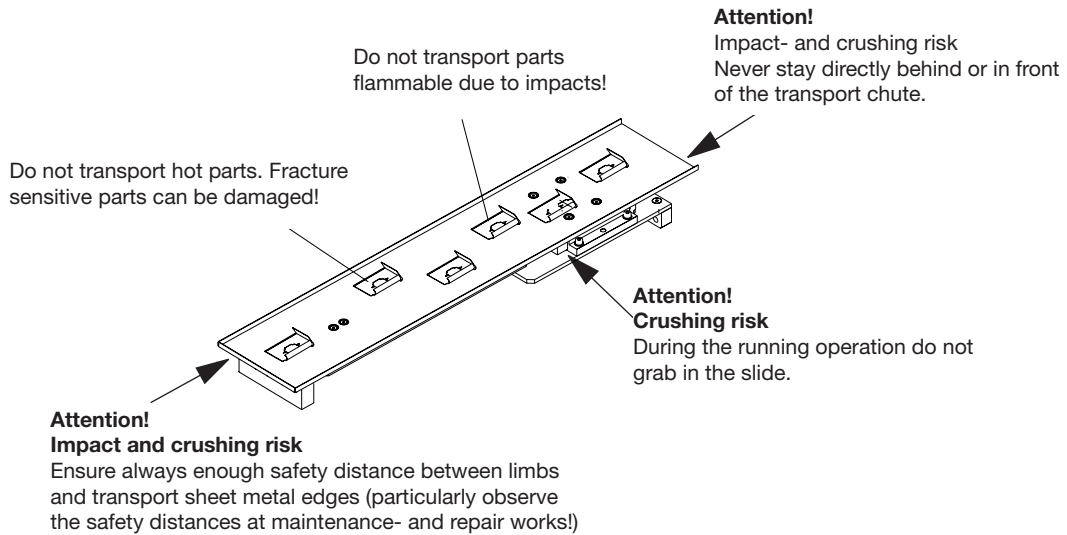
The pneumatic part conveyor TG -1000 complies with the safety requirements of the ninth regulation of the Device Safety Law.

With proper handling and consideration of the installation instructions described in this manual, a trouble-free operation and a long service life of the pneumatic part conveyor can easily be reached.

Please absolutely observe the following safety instructions because in case of improper use dangers to persons and damages to the device and objects can arise!

Operating instructions SN 9810-TG-1000 Pneumatic part conveyor

Security:

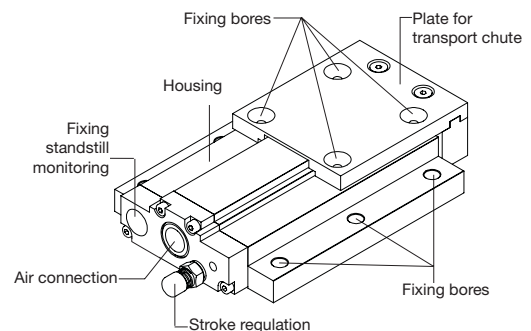


The devices have to be installed in the press (tool) that you are shielded by protective devices, such as safety guards.

Mounting:

The pneumatic part conveyor TG-1000 consists of a movable sliding plate on which the transport chute is fixed. The device is provided with compressed air (maximal 4,5 bar) at the air connection (R3/8") which can be regulated by an upstream maintenance unit with lubricator. A nominal diameter of the connection line of at least 6 mm has to be maintained, because otherwise the volume flow required by the device is not reached. Only one device per maintenance unit may be operated.

At initial operation put some drops of pneumatic oil in the air connection. Fix the device with at least 4 screws M8 on a base construction (tool base plate). The screws should be secured with a retaining ring against torsion.



Design the base construction in such a manner that the bearing surface is flat and doesn't show any unevenness.

Fix the transport sheet with 4 countersunk screws M6 on the sliding plate. Make sure that the thread length according to the sheet-thickness of the chute plus plate (eventually spacer) is so designed that the screw end cannot grind on the housing. The lighter the transport sheet, the less the wear in the device!
Due to a double bending also thin sheets of under 1 mm can have a high rigidity.

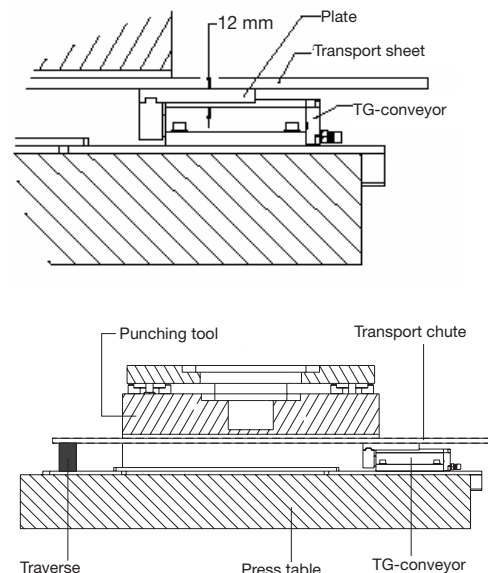
The chute weight should not exceed 3 kg.

The transport chute must be secured against vibration and tilting by a support in the front and rear area. Only with extremely short transport chutes (device length + 100 mm), which are very light, you can renounce a support if a swinging of the chute is excluded.

Attach the support in such a way that the device guiding is not tensed.

The transport chute may not bow.

The right illustration shows the chute support type TG90.



Operating instructions SN 9810-TG-1000 Pneumatic part conveyor

The safety distances shown in the illustration presume appropriate protection devices reliably excluding an impact- and crushing danger during the operation.

Otherwise, observe the regulations for safety distances according to DIN EN 349!

During installation of the device consider the stroke length. Therefore, not place the transport chute too close to possible obstacles. The stroke length can increase depending on the weight of the transport chute – definitely observe!

The transport speed is depending on the stroke frequency. The device can be regulated from approximately 40 to 140 strokes/min. Depending on the condition of the parts to be transported, the optimal transport speed has to be determined by trial with different stroke frequencies.

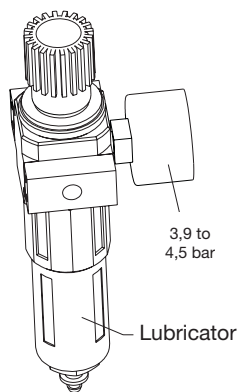
A high stroke speed must not necessarily result in a high transport speed. In the worst case, a too high stroke frequency leads to a breakup of the transport, so that the parts are only swinging on the chute.

The stroke frequency is controlled by means of the adjusting screw on the front side of the machine.

Connect with screw connection and coupling to compressed air.

Adjust maintenance unit on 3,9 to maximal 4,5 bar and fill it with oil.

Use only oil suited for compressed air. Adjustment: about 1 drop per minute at 60 strokes



Failure

The carriage does not move:

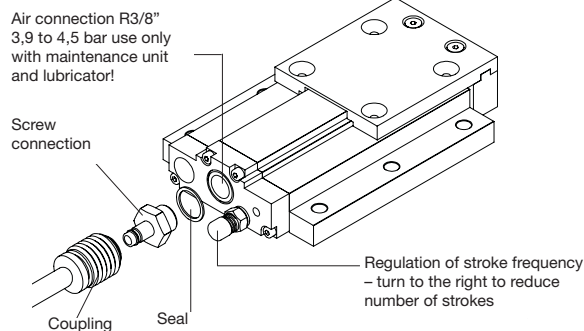
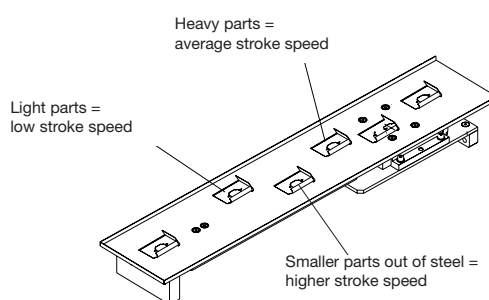
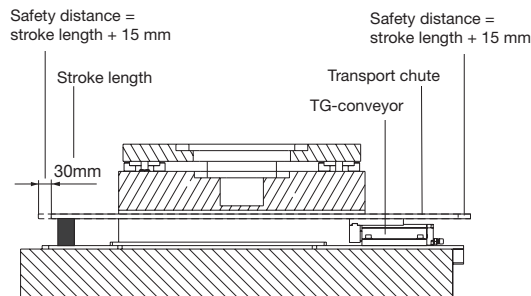
- Check if air is available und if there is the correct pressure (3,9 to 4,5 bar)
- Check the nominal diameter of the supply air line (at least 6 mm)
- Check the lubricator of the maintenance unit (possibly give a drop of oil in the air connection)
- Check if the transport chute is free to move or is possibly jammed or tilted.

Stroke frequency cannot be regulated properly:

- If the device has not been operated for a longer time, a short running-in period of about 10 minutes can be required.

Device stops after some time:

- The lubrication is not sufficient (check the lubricator). Before putting into service give some oil in the air connection.



Maintenance:

Only operate the device with maintenance unit and lubricator!

Here it has to be ensured that a sufficient permanent lubrication is guaranteed by the maintenance unit.

Depending on the used number of strokes, the oil supply has to be adapted accordingly.

Guideline: 1 drop of oil per minute at a stroke number of 60/min.

Use emulsifying thin-fluid oil to guarantee an optimal lubrication. Empty the water separator of the maintenance unit daily!

Do not operate the device under great heat, otherwise the grease in the device is lost and the O-rings will be destroyed.

Not open the conveyor TG-1000 by yourself, it has a valve mechanics which is precisely adjusted by the manufacturer.

Operating instructions SN 9810-TG-1000 Pneumatic part conveyor

Inspection intervals:

According to the warranty requirements, the pneumatic part conveyor TG-1000 has to be sent to the manufacturer for the following inspections::

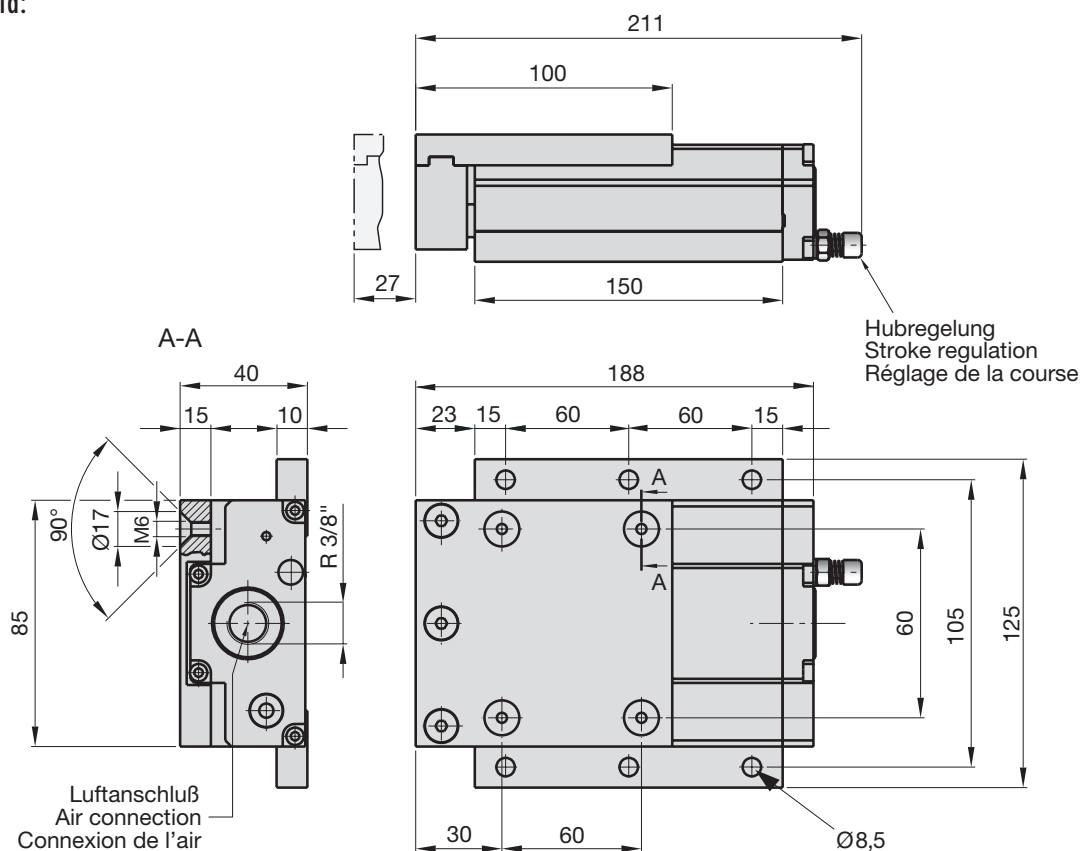
1.) Inspection in case of multi-shift operation at the latest 8 months from date of purchase

2.) Inspection in case of one shift operation at the latest 16 months from date of purchase

During these inspections the wearing parts, such as pressure springs, O-rings and bearings (if necessary) are changed.

Check at regular intervals the screw connections of the chute support and the transport chute. Loose screw connections can cause the failure of the device und thus lead to damages.

Technical data:

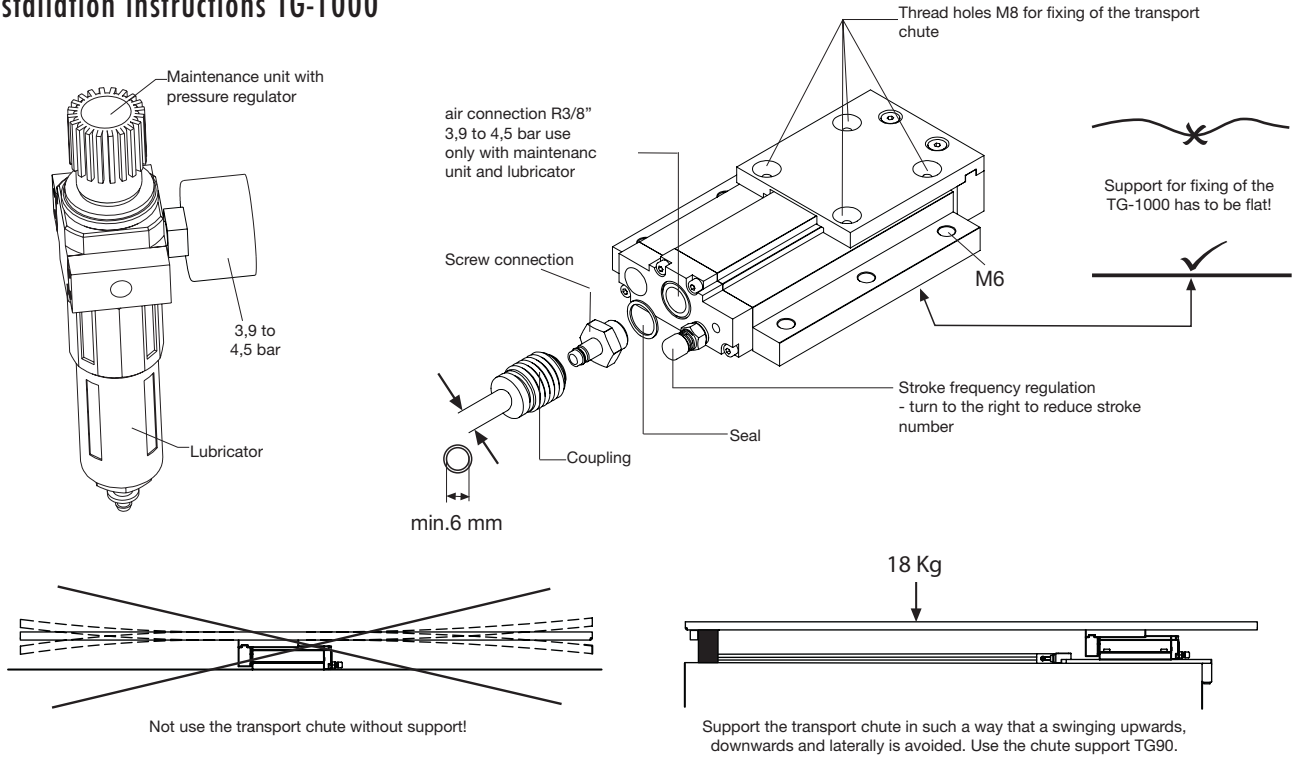


Typ TG - 1000

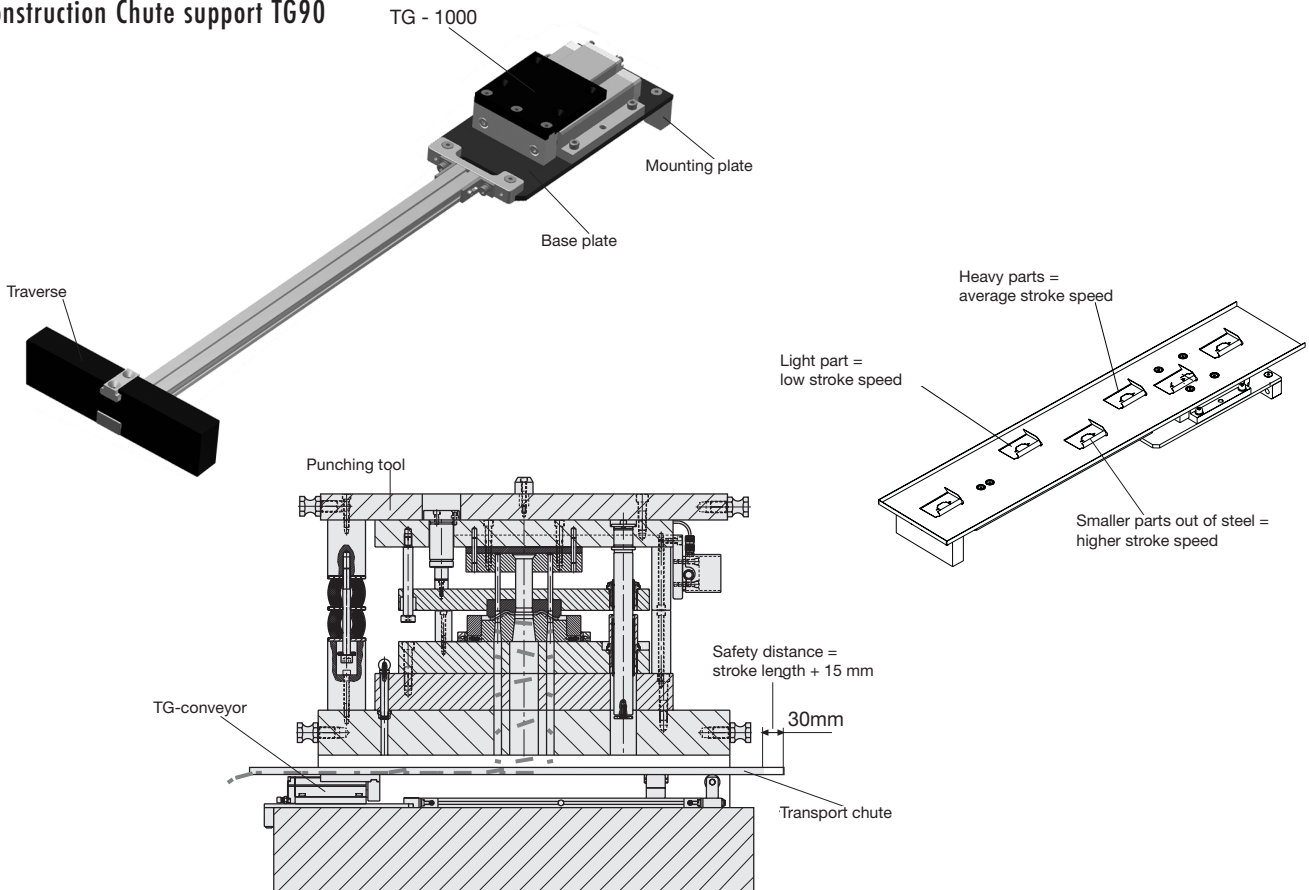
Operating pressure	3,9 – 4,5 bar
Air consumption	0,2 – 2,5 l/min.
Stroke length	27 mm
Transport speed	< 0,5 – 4 m/min.
Maximal inclination of the transport chute	8°
Noise level	< 70 dB (A)
Weight	2,1 kg
Maximal load with chute support	180 N

Operating instructions SN 9810-TG-1000 Pneumatic part conveyor

Installation instructions TG-1000



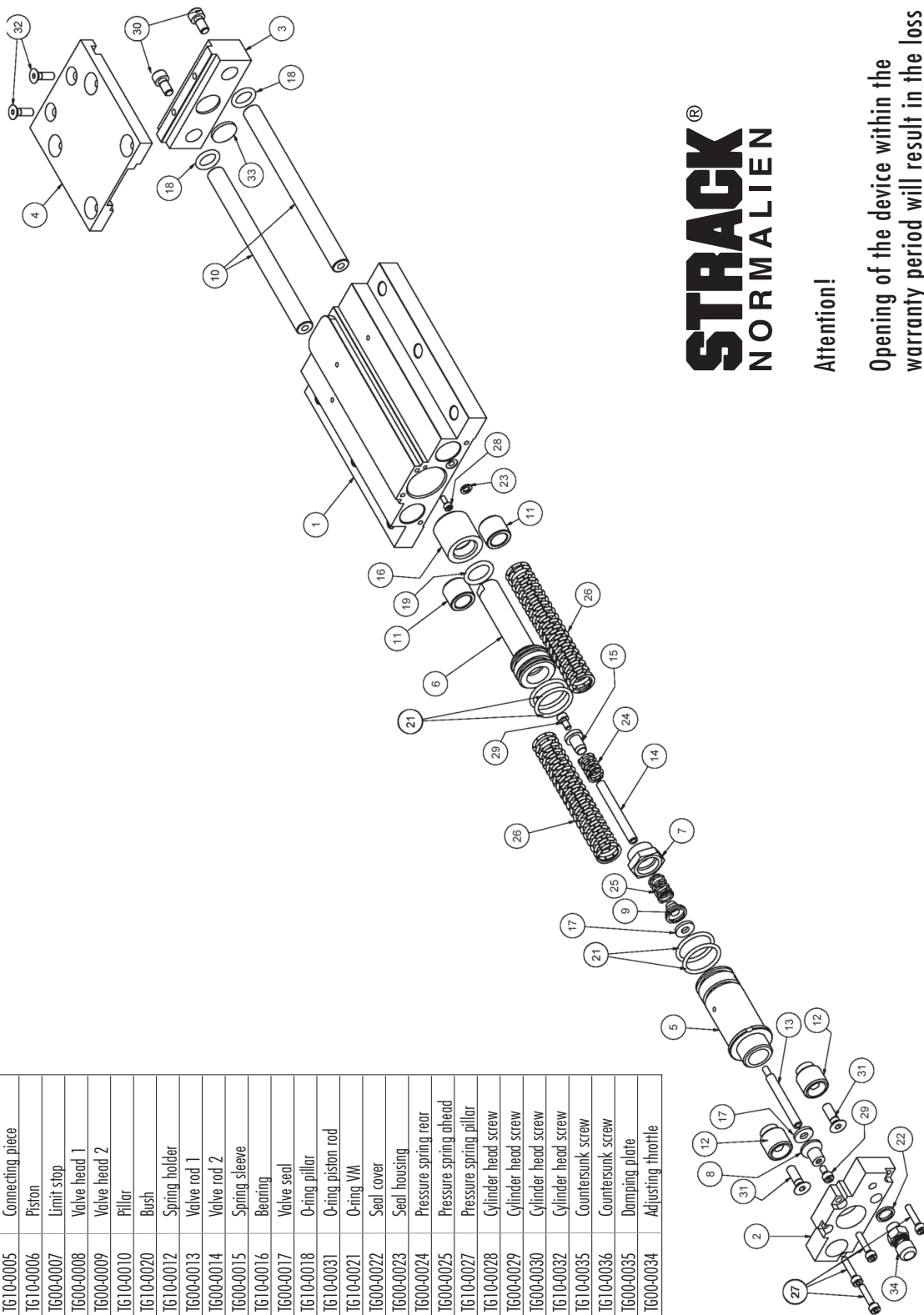
Construction Chute support TG90



Operating instructions SN 9810-TG-1000 Pneumatic part conveyor

List of spare parts SN 9810-TG-1000

List of parts		
Position	Number	Item Denomination
1	1	TG10-0001 Housing
2	1	TG10-0002 Cover
3	1	TG10-0003 Carrier
4	1	TG10-0004 Plate
5	1	TG10-0005 Connecting piece
6	1	TG10-0006 Piston
7	1	TG00-0007 Limit stop
8	1	TG00-0008 Valve head 1
9	1	TG00-0009 Valve head 2
10	2	TG10-0010 Pillar
11	2	TG10-0020 Bush
12	2	TG10-0012 Spring holder
13	1	TG00-0013 Valve rod 1
14	1	TG00-0014 Valve rod 2
15	1	TG00-0015 Spring sleeve
16	1	TG10-0016 Bearing
17	2	TG00-0017 Valve seal
18	2	TG10-0018 O-ring pillar
19	1	TG10-0031 O-ring piston rod
21	4	TG10-0021 O-ring VM
22	1	TG00-0022 Seal cover
23	1	TG00-0023 Seal housing
24	1	TG00-0024 Pressure spring rear
25	1	TG00-0025 Pressure spring ahead
26	2	TG10-0027 Pressure spring pillar
27	4	TG10-0028 Cylinder head screw
28	1	TG00-0029 Cylinder head screw
29	2	TG00-0030 Cylinder head screw
30	2	TG10-0032 Cylinder head screw
31	2	TG10-0035 Countersunk screw
32	2	TG10-0036 Countersunk screw
33	1	TG00-0035 Damping plate
34	1	TG00-0034 Adjusting throttle



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Attention!

Opening of the device within the warranty period will result in the loss of warranty. Therefore, consider the valid warranty provisions.

Operating instructions SN 9810-TG-1000 Pneumatic part conveyor

WARRANTY PNEUMATIC PART CONVEYOR SN 9810-TG

The pneumatic part conveyor TG is exclusively intended for the industrial use.

An application in the non-commercial sector is explicitly not allowed and can lead to considerable safety risks!

In case of infringement, the manufacturer accepts no liability and no warranty.

1. Definitions

- **Wear parts:** parts which are mounted in the technical devices of STRACK NORMA and which are subjected to wear (usage) due to their function during the operation, which is depending on the operating period (= operating hours). Particularly O-rings, pressure springs and slide bearings belong to the wear parts.
- **Maintenance:** Control and maintenance by STRACK NORMA or qualified specialists of the technical devices purchased from STRACK NORMA.
- **Inspection:** Control and replacement of wear parts at the technical devices purchased from STRACK NORMA.

2. Warranty

We give to all housing parts and valve mechanics parts which are no wear parts, the statutory warranty with the following restrictions:

In case of defects of the pneumatic part conveyor TG or in the event of the absence of guaranteed characteristics STRACK NORMA is at its option is firstly entitled to rework the defective item or to replace it in an appropriate period of time. We are entitled to examine the products at our discretion in your or our premises. If the rework or replacement delivery fail, you are entitled to reduce the purchase price (reduction) or to cancel the contract (conversion). In case of repair/replacement STRACK NORMA acquires ownership of the components/devices which are removed/replaced with the removal/replacement.

For wear parts we are giving a guarantee of 6 months from date of purchase respectively 6 months from the date of replacement (inspection).

The customer obliges to send the pneumatic conveyor TG® to us for inspection in the following time intervals so that the wear parts such as pressure springs, O-rings and if necessary the slide bearings can be replaced.

1.) Inspection for multi-shift operation at the latest 8 months from date of purchase.

2.) Inspection for one-shift operation at the latest 16 months from date of purchase.

If the customer doesn't send us the pneumatic part conveyor TG® in the prescribed intervals for inspection, the warranty for all wear parts expires. The warranty for parts of the housing and valve mechanics, which are no wear parts remains unaffected.

However, the guarantee generally expires, when the customer opens and demounts the pneumatic part conveyor TG®.

The inspection performance by STRACK NORMA is done for a fee and is calculated with a fixed allowance, whose amount can be changed at any time with effect for the future, whereby always the allowance agreed at the purchase is valid during the warranty period. Arising freight- and packaging costs are separately calculated and are only included in the allowance at home (Germany). The devices are sent to us by the customer free-domicile.

The inspection of the submitted devices takes place within 4 business days after receipt of the equipment in our company. We reserve the right to return the devices also at a later time, for example when there are supply shortages of wear- and spare parts.

The customer obliges to operate the devices according to our technical prescriptions (operating instructions, installation instructions and dimension sheets) and to support them with a chute support. If the support of the pneumatic part conveyor is insufficient, the wear increases to a multiple of the normal value so that we cannot assume warranty any longer in this case.

Particularly STRACK NORMA does not give warranty for:

- Defects being the result of an incorrect installation by yourself or a charged third person, operating errors, intervention in- or modification of the products by yourself or a third party not entitled to do this and external influences on the products;
- the suitability of the products for a particular purpose;
- performances rendered according to your specifications.
- Wear parts, such as O-rings and pressure springs provided that they were not renewed in the prescribed inspection intervals.
- Slide bearings provided that they were not controlled and if necessary replaced in the prescribed inspection intervals.
- Damages and wear caused by a missing or defective chute support of the devices.
- Damages and wear caused by a too high operating pressure (higher than the maximum permissible operating pressure indicated in the operating instructions).
- Damages and wear caused by defective and insufficient lubrication of the compressed air.
- Damages and wear caused by poor operating conditions (for example too high humidity at the operation site or too high ambient temperature).

In the manufacturing of its products and in the execution of warranty works STRACK NORMA uses replacement parts or components which are new or in mint condition according to the respective customary industrial standard.

Operating instructions SN 9810-TG-1500 Pneumatic part conveyor

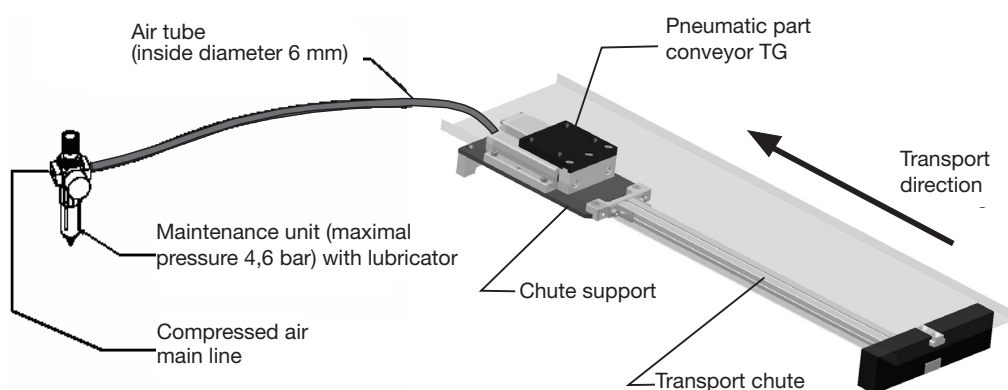
Intended use:

The pneumatic part conveyor TG is exclusively intended for the industrial use. Any use in the non-commercial sector is expressly prohibited. Several parts, in particular punching parts are transported by the pneumatic part conveyor by means of a screwed transport chute. The conveyor utilizes the surface friction of the parts to be transported and the surface friction of the transport chute.

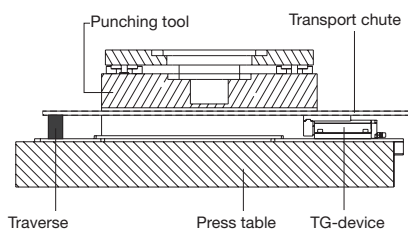
The device works with regulated compressed air and needs a transport chute, a chute support which is stable enough and a compressed air connection adjustable on 3,9 to maximal 4,6 bar with maintenance unit.

The transport direction is always in the direction of the air connection side.

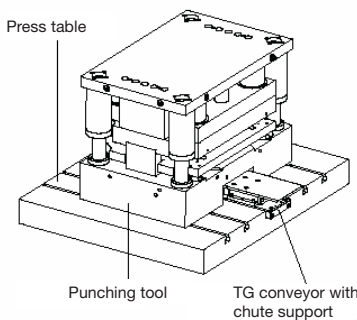
The following graphic explains the construction



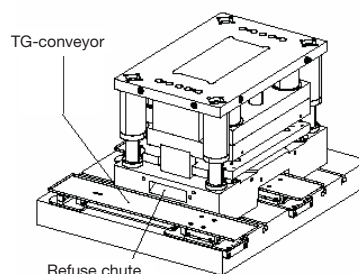
Examples of application:



Cutout through a punching tool with refuse chute and TG-conveyor with chute support.



Stamping waste parts are transported out of the refuse chute and led off to the scrap chute.



Stamping waste parts are transported to the scrap chute laterally to the tool.

The transport performance is basically depending on the surface condition of the parts to be transported, the surface condition of the transport chute or the adjusted stroke frequency.

The transport performance of the TG-1500 is maximally 250 N with chute support.

To avoid the risk of tool breakage or other damages at a standstill of the conveyor during the automatic manufacturing process, a standstill monitoring for the device must be provided which gives a signal to the machine control at disturbances or failure of the device to trigger an automatic stop of the machine.

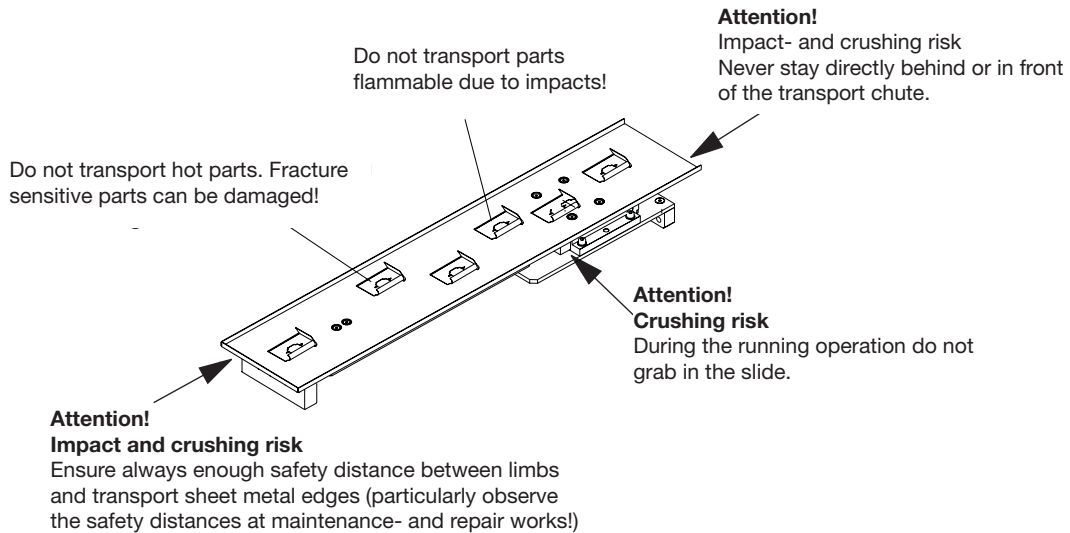
The pneumatic part conveyor TG -1500 complies with the safety requirements of the ninth regulation of the Device Safety Law.

With proper handling and consideration of the installation instructions described in this manual, a trouble-free operation and a long service life of the pneumatic part conveyor can easily be reached.

Please absolutely observe the following safety instructions because in case of improper use dangers to persons and damages to the device and objects can arise!

Operating instructions SN 9810-TG-1500 Pneumatic part conveyor

Security:

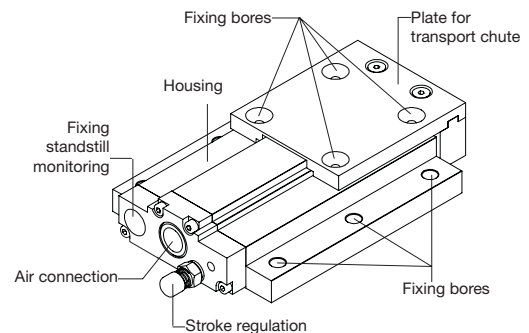


The devices have to be installed in the press (tool) that you are shielded by protective devices, such as safety guards.

Mounting:

The pneumatic part conveyor TG-1500 consists of a movable sliding plate on which the transport chute is fixed. The device is provided with compressed air (maximal 4,6 bar) at the air connection (R3/8") which can be regulated by an upstream maintenance unit with lubricator. A nominal diameter of the connection line of at least 6 mm has to be maintained, because otherwise the volume flow required by the device is not reached. Only one device per maintenance unit may be operated.

At initial operation put some drops of pneumatic oil in the air connection. Fix the device with at least 4 screws M8 on a base construction (tool base plate). The screws should be secured with a retaining ring against torsion.



Design the base construction in such a manner that the bearing surface is flat and doesn't show any unevenness.

Fix the transport sheet with 4 countersank screws M6 on the sliding plate. Make sure that the thread length according to the sheet-thickness of the chute plus plate (eventually spacer) is so designed that the screw end cannot grind on the housing. The lighter the transport sheet, the less the wear in the device!
Due to a double bending also thin sheets of under 1 mm can have a high rigidity.

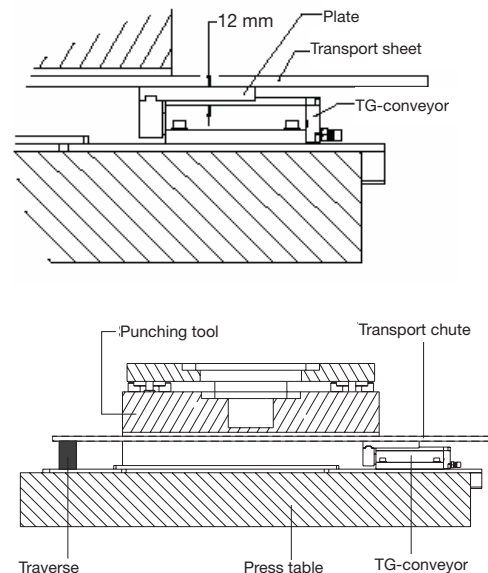
The chute weight should not exceed 3 kg.

The transport chute must be secured against vibration and tilting by a support in the front and rear area. Only with extremely short transport chutes (device length + 100 mm), which are very light, you can renounce a support if a swinging of the chute is excluded.

Attach the support in such a way that the device guiding is not tensed.

The transport chute may not bow.

The right illustration shows the chute support type TG90.



Operating instructions SN 9810-TG-1500 Pneumatic part conveyor

The safety distances shown in the illustration presume appropriate protection devices reliably excluding an impact- and crushing danger during the operation.

Otherwise, observe the regulations for safety distances according to DIN EN 349!

During installation of the device consider the stroke length. Therefore, not place the transport chute too close to possible obstacles. The stroke length can increase depending on the weight of the transport chute – definitely observe!

The transport speed is depending on the stroke frequency. The device can be regulated from approximately 40 to 180 strokes/min. Depending on the condition of the parts to be transported, the optimal transport speed has to be determined by trial with different stroke frequencies.

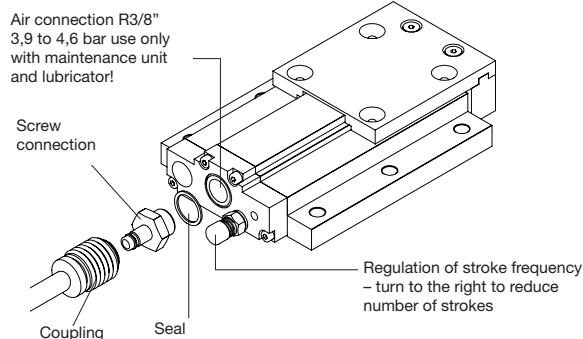
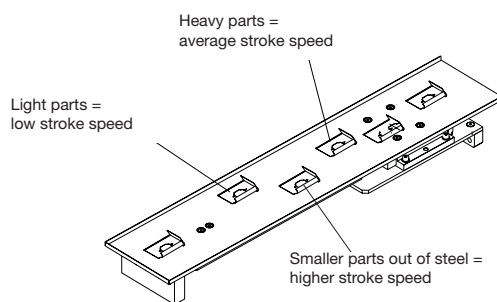
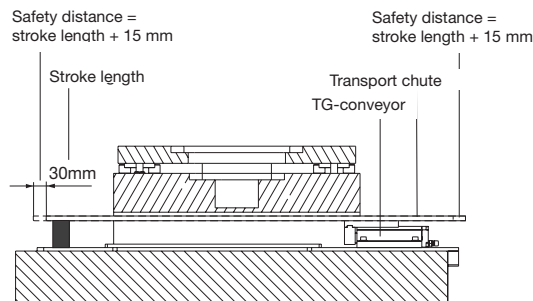
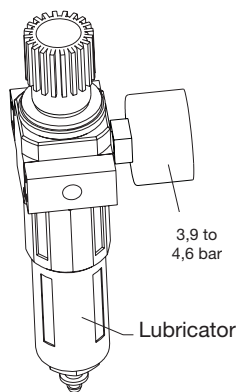
A high stroke speed must not necessarily result in a high transport speed. In the worst case, a too high stroke frequency leads to a breakup of the transport, so that the parts are only swinging on the chute.

The stroke frequency is controlled by means of the adjusting screw on the front side of the machine.

Connect with screw connection and coupling to compressed air.

Adjust maintenance unit on 3,9 to maximal 4,6 bar and fill it with oil.

Use only oil suited for compressed air. Adjustment: about 1 drop per minute at 60 strokes



Failure

The carriage does not move:

- Check if air is available und if there is the correct pressure (3,9 to 4,6 bar)
- Check the nominal diameter of the supply air line (at least 6 mm)
- Check the lubricator of the maintenance unit (possibly give a drop of oil in the air connection)
- Check if the transport chute is free to move or is possibly jammed or tilted.

Stroke frequency cannot be regulated properly:

- If the device has not been operated for a longer time, a short running-in period of about 10 minutes can be required.

Device stops after some time:

- The lubrication is not sufficient (check the lubricator). Before putting into service give some oil in the air connection.

Maintenance:

Only operate the device with maintenance unit and lubricator!

Here it has to be ensured that a sufficient permanent lubrication is guaranteed by the maintenance unit.

Depending on the used number of strokes, the oil supply has to be adapted accordingly.

Guideline: 1 drop of oil per minute at a stroke number of 60/min.

Use emulsifying thin-fluid oil to guarantee an optimal lubrication. Empty the water separator of the maintenance unit daily!

Do not operate the device under great heat, otherwise the grease in the device is lost and the O-rings will be destroyed.

Not open the conveyor TG-1500 by yourself, it has a valve mechanics which is precisely adjusted by the manufacturer.

Operating instructions SN 9810-TG-1500 Pneumatic part conveyor

Inspection intervals:

According to the warranty requirements, the pneumatic part conveyor TG-1500 has to be sent to the manufacturer for the following inspections::

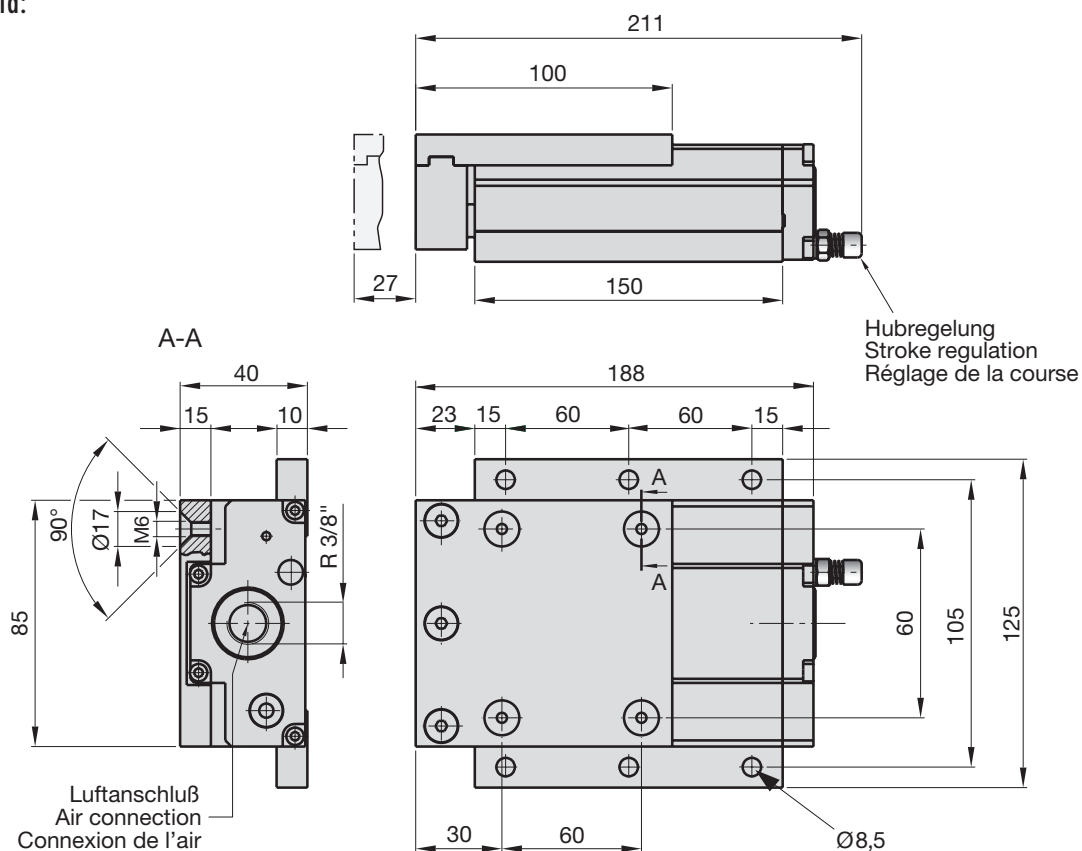
1.) Inspection in case of multi-shift operation at the latest 8 months from date of purchase

2.) Inspection in case of one shift operation at the latest 16 months from date of purchase

During these inspections the wearing parts, such as pressure springs, O-rings and bearings (if necessary) are changed.

Check at regular intervals the screw connections of the chute support and the transport chute. Loose screw connections can cause the failure of the device und thus lead to damages.

Technical data:

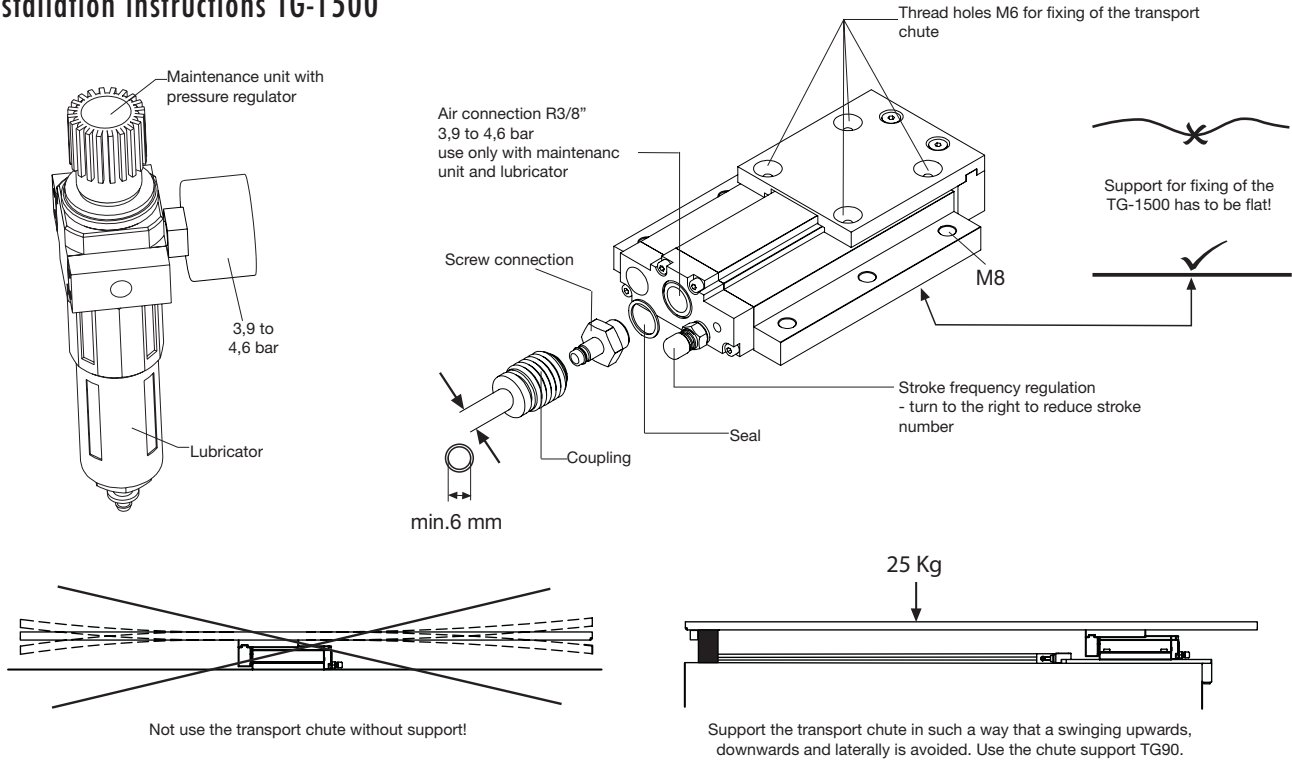


Typ TG-1500

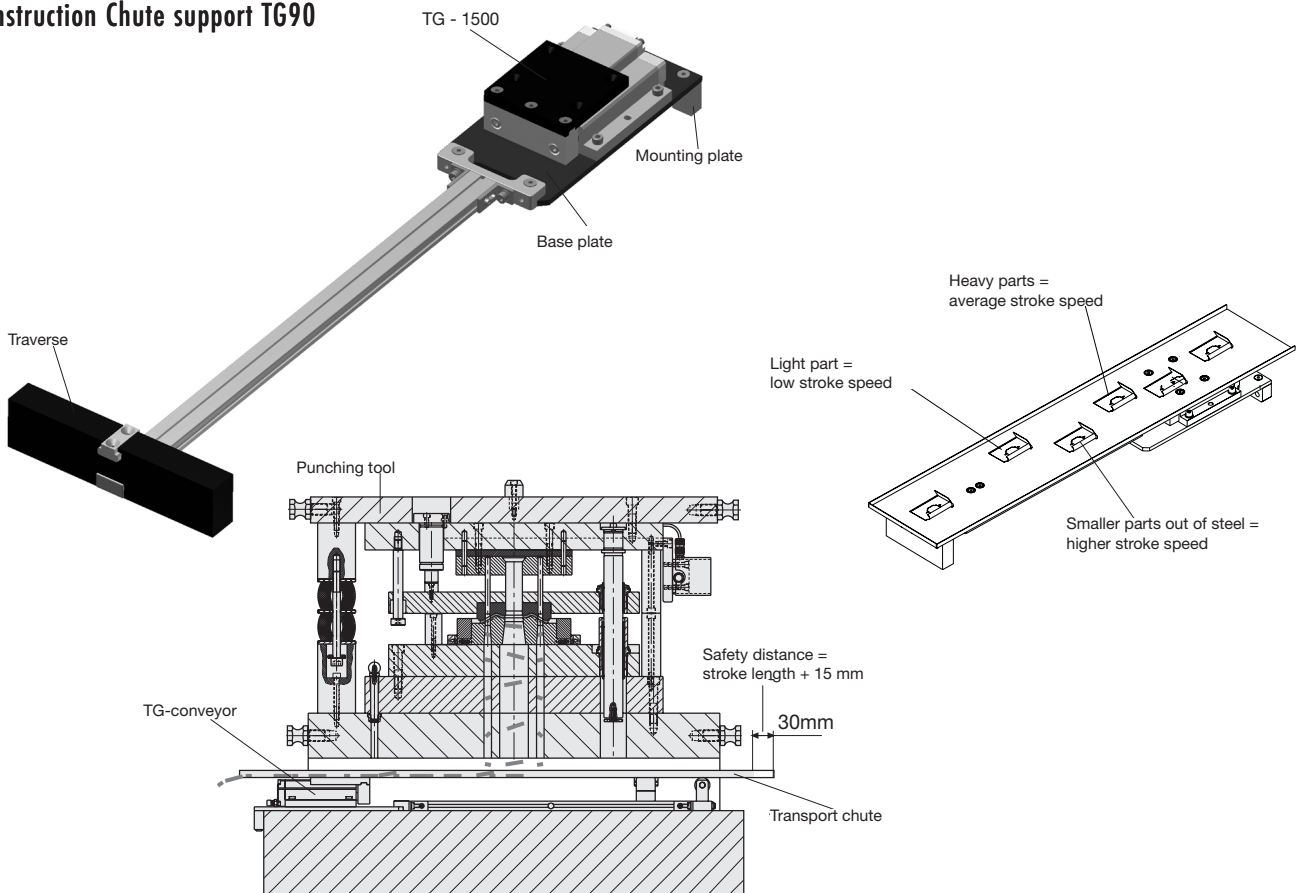
Operating pressure	3,9 – 4,6 bar
Air consumption	0,3 – 2,5 l/min.
Stroke length	27 mm
Transport speed	< 0,5 – 4 m/min.
Maximal inclination of the transport chute	8°
Noise level	< 70 dB (A)
Weight	2,1 kg
Maximal load with chute support	250 N

Operating instructions SN 9810-TG-1500 Pneumatic part conveyor

Installation instructions TG-1500



Construction Chute support TG90



Operating instructions SN 9810-TG-1500 Pneumatic part conveyor

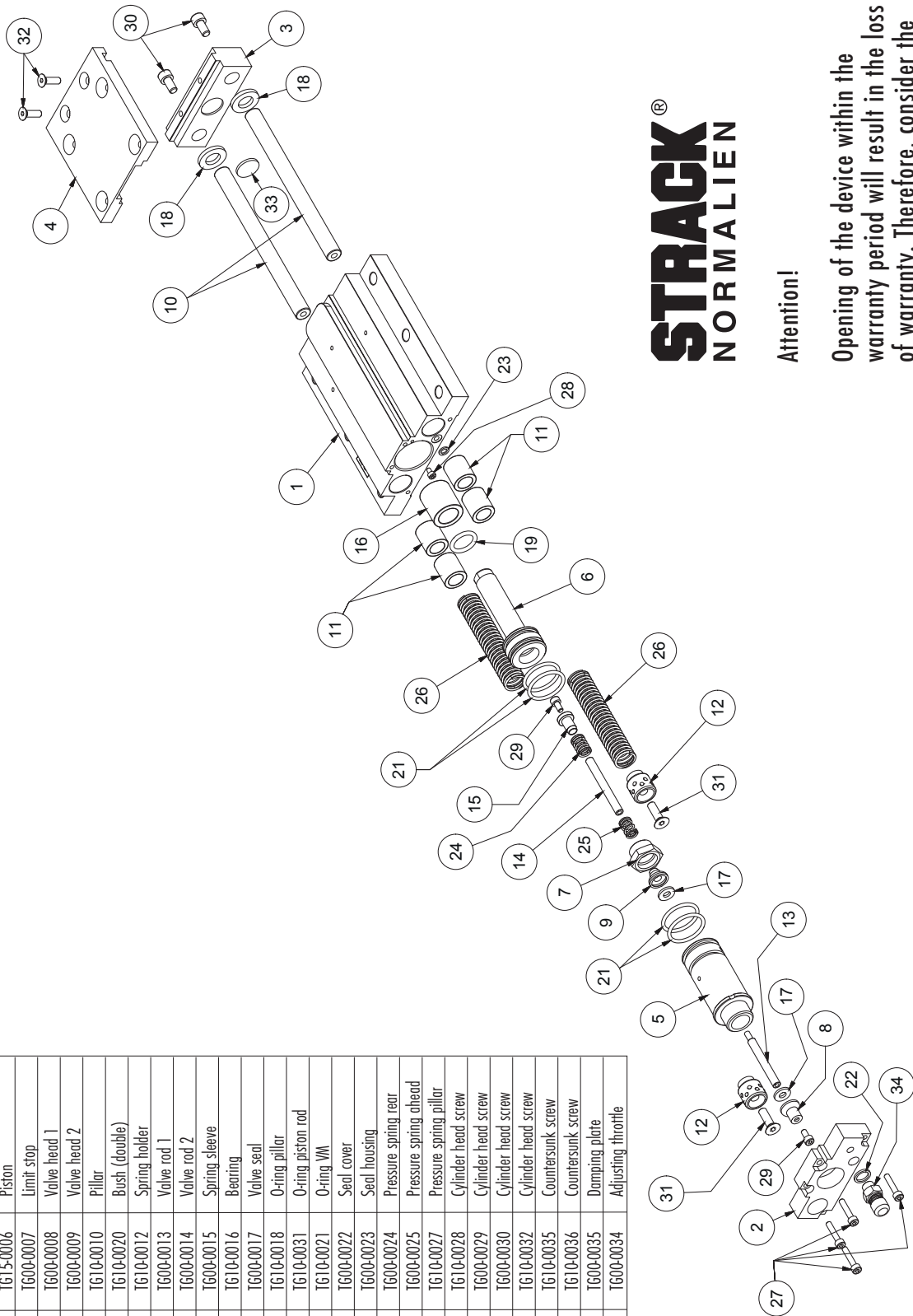
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Attention!

Opening of the device within the warranty period will result in the loss of warranty. Therefore, consider the valid warranty provisions.

List of spare parts SN 9810-TG-1500

List of parts			
Position	Number	Items	Denomination
1	1	TG15-0001	Housing
2	1	TG10-0002	Cover
3	1	TG10-0003	Carrier
4	1	TG10-0004	Plate
5	1	TG15-0005	Connecting piece
6	1	TG15-0006	Piston
7	1	TG00-0007	Limit stop
8	1	TG00-0008	Valve head 1
9	1	TG00-0009	Valve head 2
10	2	TG10-0010	Pillar
11	2	TG10-0020	Bush (double)
12	2	TG10-0012	Spring holder
13	1	TG00-0013	Valve rod 1
14	1	TG00-0014	Valve rod 2
15	1	TG00-0015	Spring sleeve
16	1	TG10-0016	Bearing
17	2	TG00-0017	Valve seal
18	2	TG10-0018	O-ring pillar
19	1	TG10-0031	O-ring piston rod
21	4	TG10-0021	O-ring VM
22	1	TG00-0022	Seal cover
23	1	TG00-0023	Seal housing
24	1	TG00-0024	Pressure spring rear
25	1	TG00-0025	Pressure spring ahead
26	2	TG10-0027	Pressure spring pillar
27	4	TG10-0028	Cylinder head screw
28	1	TG00-0029	Cylinder head screw
29	2	TG00-0030	Cylinder head screw
30	2	TG10-0032	Cylinder head screw
31	2	TG10-0035	Countersunk screw
32	2	TG10-0036	Countersunk screw
33	1	TG00-0035	Damping plate
34	1	TG00-0034	Adjusting throttle



Operating instructions SN 9810-TG-1500 Pneumatic part conveyor

WARRANTY PNEUMATIC PART CONVEYOR SN 9810-TG

The pneumatic part conveyor TG is exclusively intended for the industrial use.

An application in the non-commercial sector is explicitly not allowed and can lead to considerable safety risks!

In case of infringement, the manufacturer accepts no liability and no warranty.

1. Definitions

- **Wear parts:** parts which are mounted in the technical devices of STRACK NORMA and which are subjected to wear (usage) due to their function during the operation, which is depending on the operating period (= operating hours). Particularly O-rings, pressure springs and slide bearings belong to the wear parts.
- **Maintenance:** Control and maintenance by STRACK NORMA or qualified specialists of the technical devices purchased from STRACK NORMA.
- **Inspection:** Control and replacement of wear parts at the technical devices purchased from STRACK NORMA.

2. Warranty

We give to all housing parts and valve mechanics parts which are no wear parts, the statutory warranty with the following restrictions:

In case of defects of the pneumatic part conveyor TG or in the event of the absence of guaranteed characteristics STRACK NORMA is at its option is firstly entitled to rework the defective item or to replace it in an appropriate period of time. We are entitled to examine the products at our discretion in your or our premises. If the rework or replacement delivery fail, you are entitled to reduce the purchase price (reduction) or to cancel the contract (conversion). In case of repair/replacement STRACK NORMA acquires ownership of the components/devices which are removed/replaced with the removal/replacement.

For wear parts we are giving a guarantee of 6 months from date of purchase respectively 6 months from the date of replacement (inspection).

The customer obliges to send the pneumatic conveyor TG® to us for inspection in the following time intervals so that the wear parts such as pressure springs, O-rings and if necessary the slide bearings can be replaced.

1.) Inspection for multi-shift operation at the latest 8 months from date of purchase.

2.) Inspection for one-shift operation at the latest 16 months from date of purchase.

If the customer doesn't send us the pneumatic part conveyor TG® in the prescribed intervals for inspection, the warranty for all wear parts expires. The warranty for parts of the housing and valve mechanics, which are no wear parts remains unaffected.

However, the guarantee generally expires, when the customer opens and demounts the pneumatic part conveyor TG®.

The inspection performance by STRACK NORMA is done for a fee and is calculated with a fixed allowance, whose amount can be changed at any time with effect for the future, whereby always the allowance agreed at the purchase is valid during the warranty period. Arising freight- and packaging costs are separately calculated and are only included in the allowance at home (Germany). The devices are sent to us by the customer free-domicile.

The inspection of the submitted devices takes place within 4 business days after receipt of the equipment in our company. We reserve the right to return the devices also at a later time, for example when there are supply shortages of wear- and spare parts.

The customer obliges to operate the devices according to our technical prescriptions (operating instructions, installation instructions and dimension sheets) and to support them with a chute support. If the support of the pneumatic part conveyor is insufficient, the wear increases to a multiple of the normal value so that we cannot assume warranty any longer in this case.

Particularly STRACK NORMA does not give warranty for:

- Defects being the result of an incorrect installation by yourself or a charged third person, operating errors, intervention in- or modification of the products by yourself or a third party not entitled to do this and external influences on the products;
- the suitability of the products for a particular purpose;
- performances rendered according to your specifications.
- Wear parts, such as O-rings and pressure springs provided that they were not renewed in the prescribed inspection intervals.
- Slide bearings provided that they were not controlled and if necessary replaced in the prescribed inspection intervals.
- Damages and wear caused by a missing or defective chute support of the devices.
- Damages and wear caused by a too high operating pressure (higher than the maximum permissible operating pressure indicated in the operating instructions).
- Damages and wear caused by defective and insufficient lubrication of the compressed air.
- Damages and wear caused by poor operating conditions (for example too high humidity at the operation site or too high ambient temperature).

In the manufacturing of its products and in the execution of warranty works STRACK NORMA uses replacement parts or components which are new or in mint condition according to the respective customary industrial standard.

Operating instructions SN 9810-TG-2000 Pneumatic part conveyor

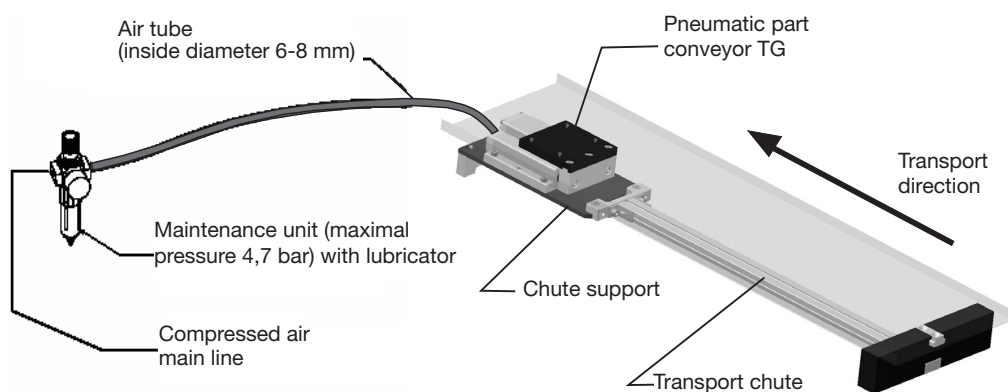
Intended use:

The pneumatic part conveyor TG is exclusively intended for the industrial use. Any use in the non-commercial sector is expressly prohibited. Several parts, in particular punching parts are transported by the pneumatic part conveyor by means of a screwed transport chute. The conveyor utilizes the surface friction of the parts to be transported and the surface friction of the transport chute.

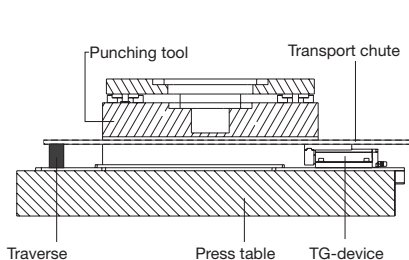
The device works with regulated compressed air and needs a transport chute, a chute support which is stable enough and a compressed air connection adjustable on 4,2 to maximal 4,7 bar with maintenance unit.

The transport direction is always in the direction of the air connection side.

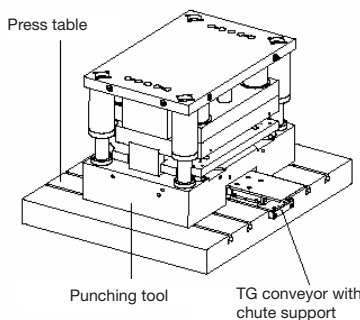
The following graphic explains the construction



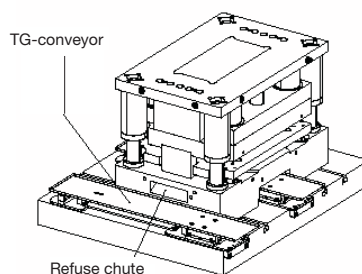
Examples of application:



Cutout through a punching tool with refuse chute and TG-conveyor with chute support.



Stamping waste parts are transported out of the refuse chute and led off to the scrap chute.



Stamping waste parts are transported to the scrap chute laterally to the tool.

The transport performance is basically depending on the surface condition of the parts to be transported, the surface condition of the transport chute or the adjusted stroke frequency.

The transport performance of the TG-2000 is maximally 350 N with chute support.

To avoid the risk of tool breakage or other damages at a standstill of the conveyor during the automatic manufacturing process, a standstill monitoring for the device must be provided which gives a signal to the machine control at disturbances or failure of the device to trigger an automatic stop of the machine.

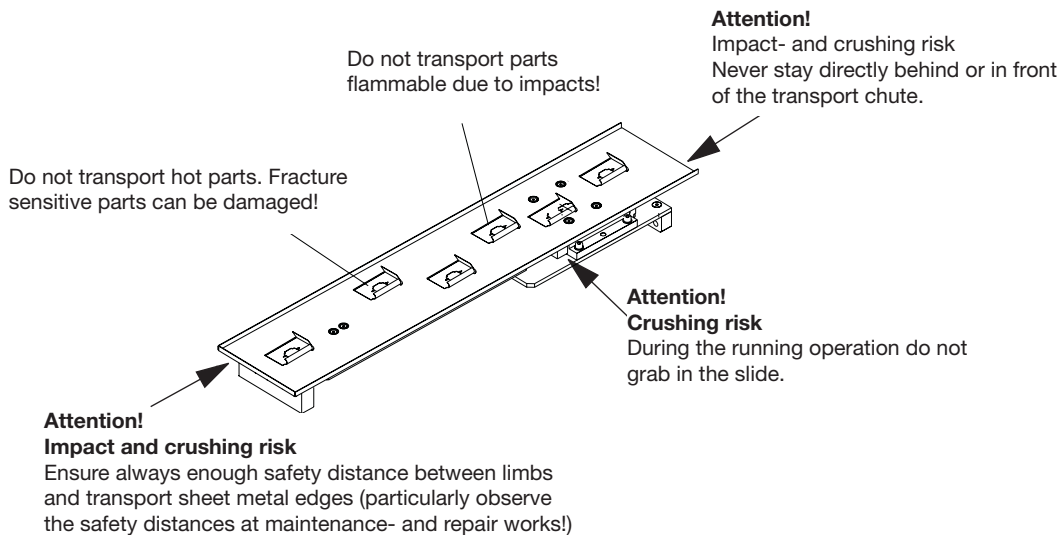
The pneumatic part conveyor TG -2000 complies with the safety requirements of the ninth regulation of the Device Safety Law.

With proper handling and consideration of the installation instructions described in this manual, a trouble-free operation and a long service life of the pneumatic part conveyor can easily be reached.

Please absolutely observe the following safety instructions because in case of improper use dangers to persons and damages to the device and objects can arise!

Operating instructions SN 9810-TG-2000 Pneumatic part conveyor

Security:

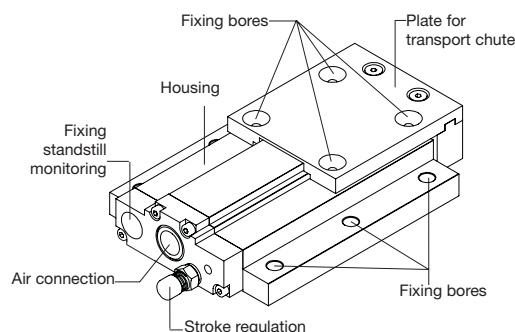


The devices have to be installed in the press (tool) that you are shielded by protective devices, such as safety guards.

Mounting:

The pneumatic part conveyor TG-2000 consists of a movable sliding plate on which the transport chute is fixed. The device is provided with compressed air (maximal 4,7 bar) at the air connection (R3/8") which can be regulated by an upstream maintenance unit with lubricator. A nominal diameter of the connection line of at least 6 mm has to be maintained, because otherwise the volume flow required by the device is not reached. Only one device per maintenance unit may be operated.

At initial operation put some drops of pneumatic oil in the air connection. Fix the device with at least 4 screws M8 on a base construction (tool base plate). The screws should be secured with a retaining ring against torsion.



Design the base construction in such a manner that the bearing surface is flat and doesn't show any unevenness.

Fix the transport sheet with 4 countersank screws M6 on the sliding plate. Make sure that the thread length according to the sheet-thickness of the chute plus plate (eventually spacer) is so designed that the screw end cannot grind on the housing. The lighter the transport sheet, the less the wear in the device!
Due to a double bending also thin sheets of under 1 mm can have a high rigidity.

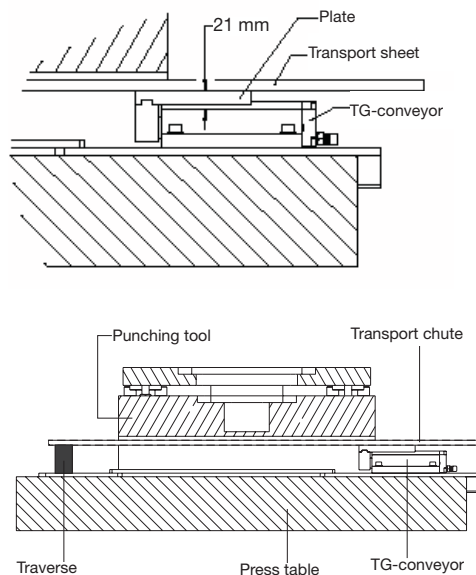
The chute weight should not exceed 5 kg.

The transport chute must be secured against vibration and tilting by a support in the front and rear area. Only with extremely short transport chutes (device length + 150 mm), which are very light, you can renounce a support if a swinging of the chute is excluded.

Attach the support in such a way that the device guiding is not tensed.

The transport chute may not bow.

The right illustration shows the chute support type TG91/TG92.



Operating instructions SN 9810-TG-2000 Pneumatic part conveyor

The safety distances shown in the illustration presume appropriate protection devices reliably excluding an impact- and crushing danger during the operation.

Otherwise, observe the regulations for safety distances according to DIN EN 349!

During installation of the device consider the stroke length. Therefore, not place the transport chute too close to possible obstacles. The stroke length can increase depending on the weight of the transport chute – definitely observe!

The transport speed is depending on the stroke frequency. The device can be regulated from approximately 40 to 120 strokes/min. Depending on the condition of the parts to be transported, the optimal transport speed has to be determined by trial with different stroke frequencies.

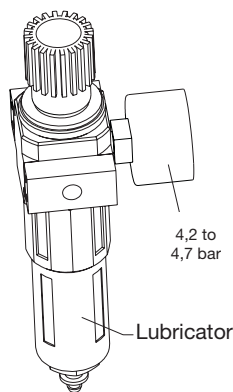
A high stroke speed must not necessarily result in a high transport speed. In the worst case, a too high stroke frequency leads to a breakup of the transport, so that the parts are only swinging on the chute.

The stroke frequency is controlled by means of the adjusting screw on the front side of the machine.

Connect with screw connection and coupling to compressed air.

Adjust maintenance unit on 4,2 to maximal 4,7 bar and fill it with oil.

Use only oil suited for compressed air. Adjustment: about 1 drop per minute at 60 strokes



Failure

The carriage does not move:

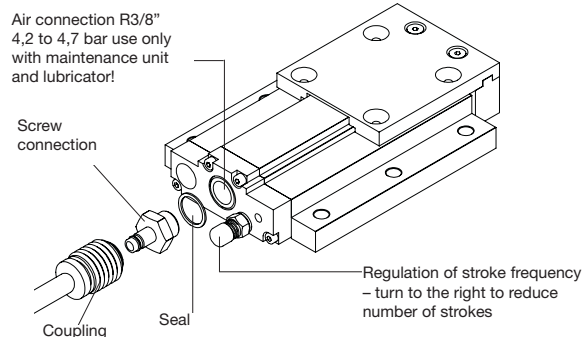
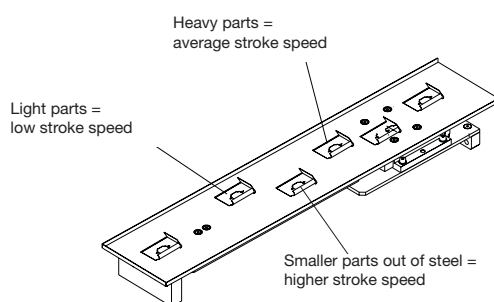
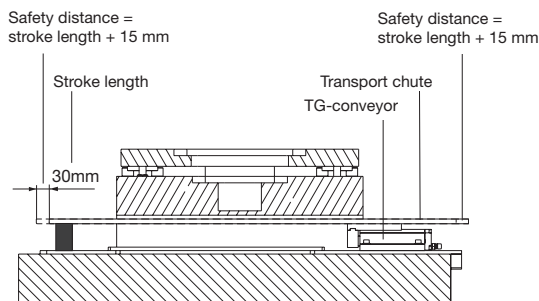
- Check if air is available und if there is the correct pressure (4,2 to 4,7 bar)
- Check the nominal diameter of the supply air line (at least 8 mm)
- Check the lubricator of the maintenance unit (possibly give a drop of oil in the air connection)
- Check if the transport chute is free to move or is possibly jammed or tilted.

Stroke frequency cannot be regulated properly:

- If the device has not been operated for a longer time, a short running-in period of about 10 minutes can be required.

Device stops after some time:

- The lubrication is not sufficient (check the lubricator). Before putting into service give some oil in the air connection.



Maintenance:

Only operate the device with maintenance unit and lubricator!

Here it has to be ensured that a sufficient permanent lubrication is guaranteed by the maintenance unit.

Depending on the used number of strokes, the oil supply has to be adapted accordingly.

Guideline: 1 drop of oil per minute at a stroke number of 60/min.

Use emulsifying thin-fluid oil to guarantee an optimal lubrication. Empty the water separator of the maintenance unit daily!

Do not operate the device under great heat, otherwise the grease in the device is lost and the O-rings will be destroyed.

Not open the conveyor TG-2000 by yourself, it has a valve mechanics which is precisely adjusted by the manufacturer.

Operating instructions SN 9810-TG-2000 Pneumatic part conveyor

Inspection intervals:

According to the warranty requirements, the pneumatic part conveyor TG-2000 has to be sent to the manufacturer for the following inspections::

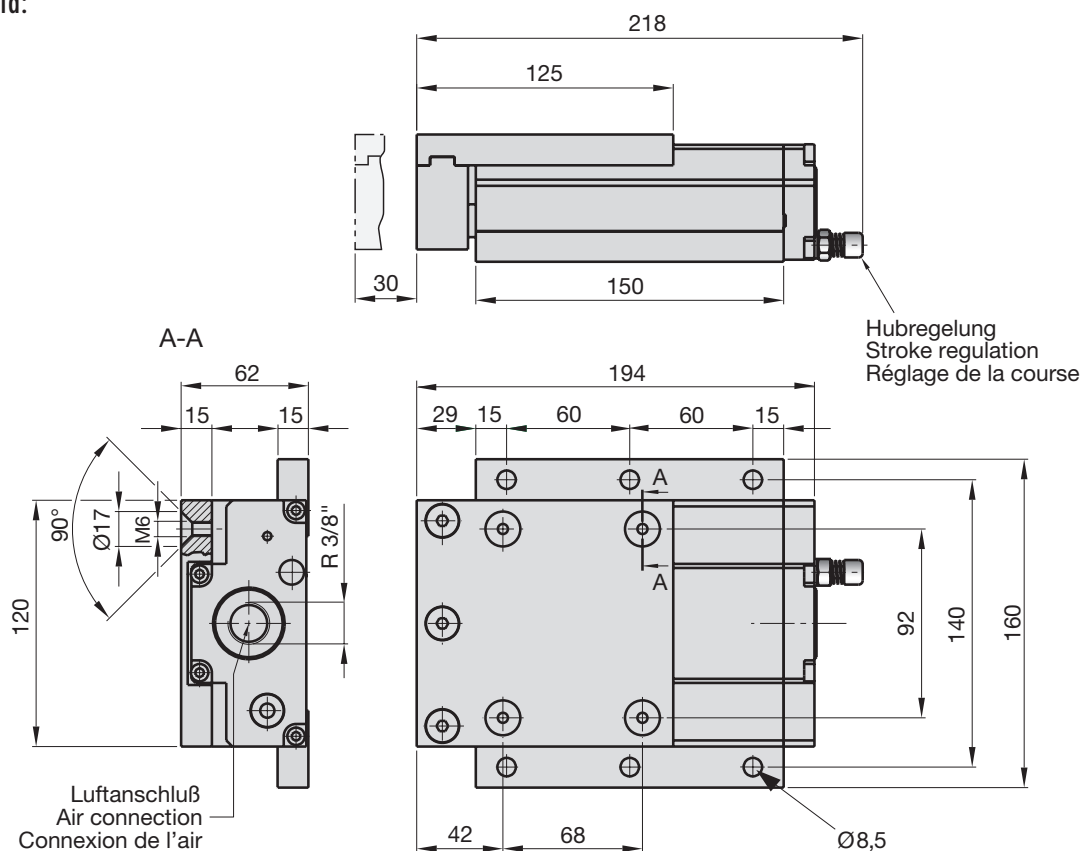
1.) Inspection in case of multi-shift operation at the latest 8 months from date of purchase

2.) Inspection in case of one shift operation at the latest 16 months from date of purchase

During these inspections the wearing parts, such as pressure springs, O-rings and bearings (if necessary) are changed.

Check at regular intervals the screw connections of the chute support and the transport chute. Loose screw connections can cause the failure of the device und thus lead to damages.

Technical data:

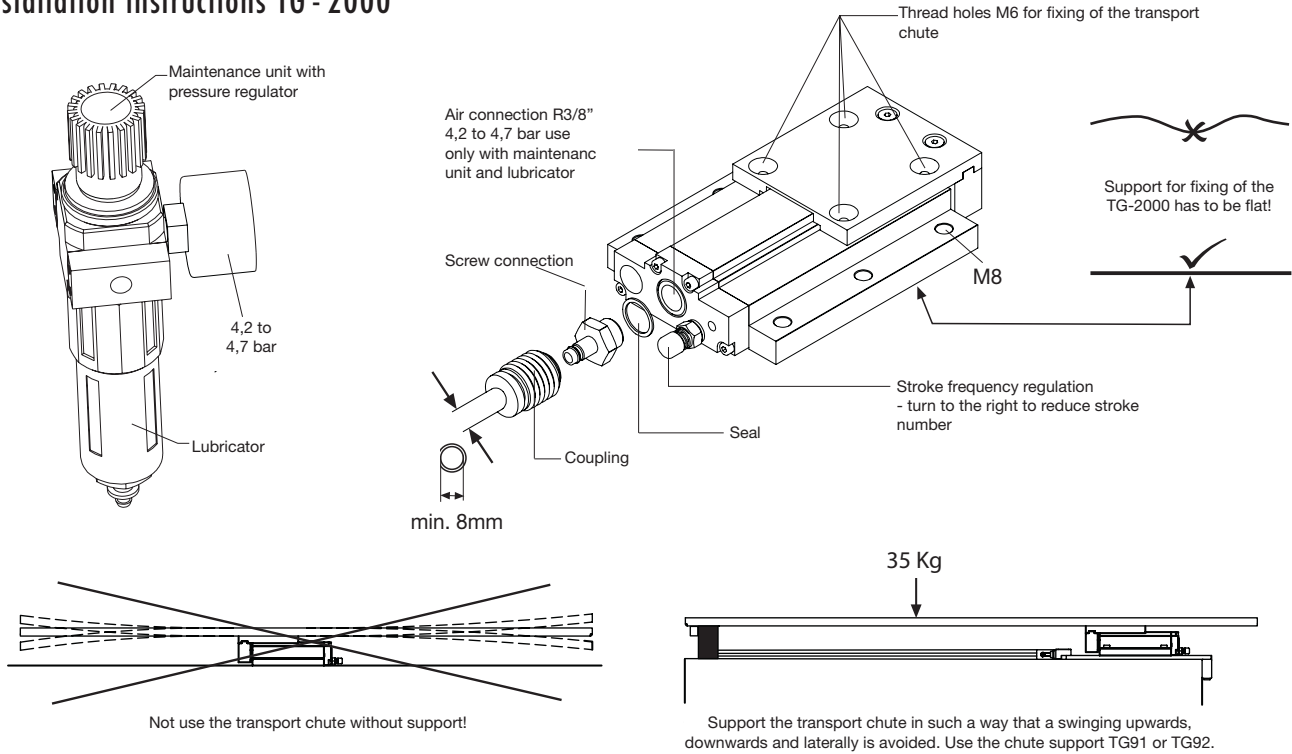


Typ TG - 2000

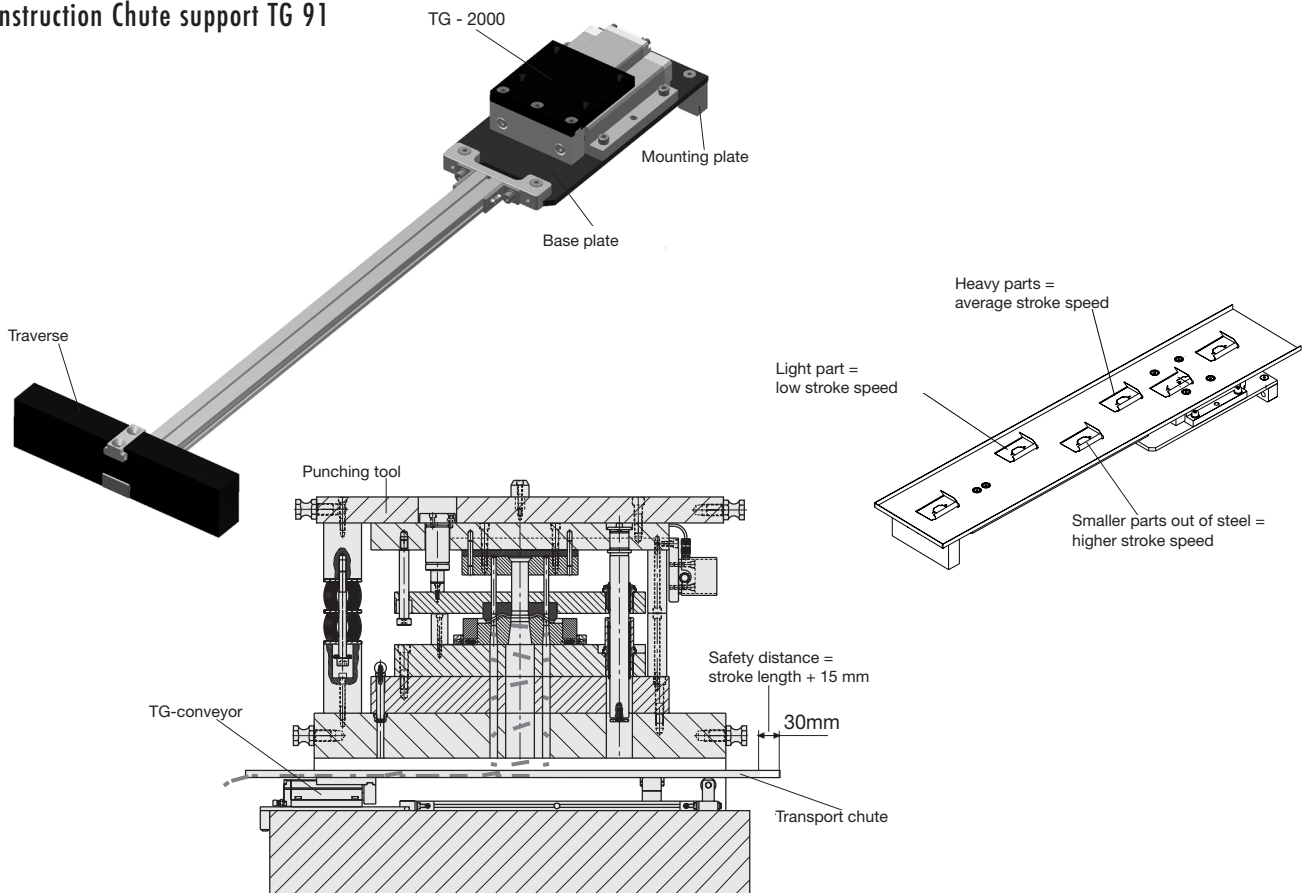
Operating pressure	4,2 – 4,7 bar
Air consumption	0,5 – 5 l/min.
Stroke length	30 mm
Transport speed	< 0,5 – 3 m/min.
Maximal inclination of the transport chute	8°
Noise level	< 70 dB (A)
Weight	4,3 kg
Maximal load with chute support	350 N

Operating instructions SN 9810-TG-2000 Pneumatic part conveyor

Installation instructions TG - 2000



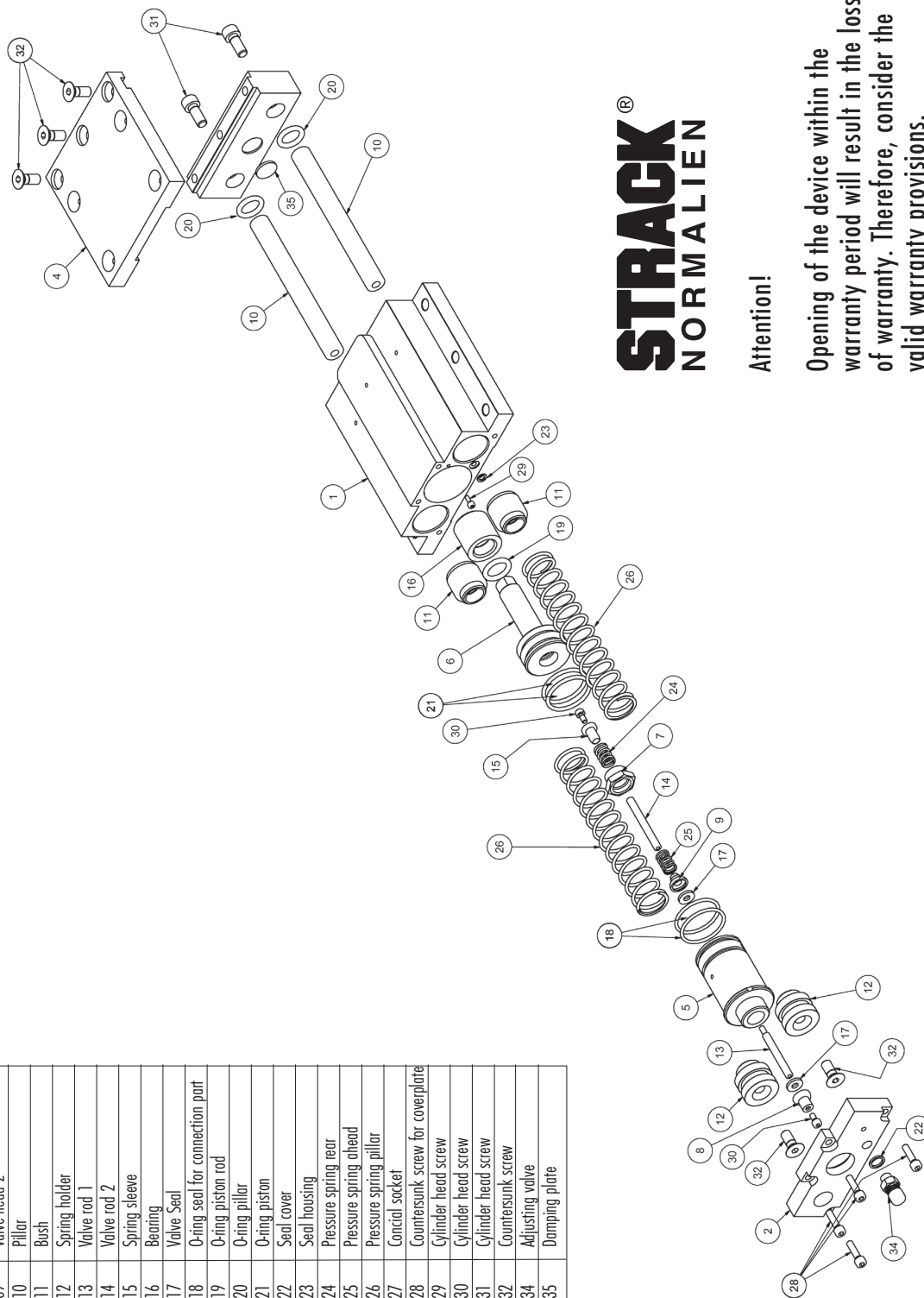
Construction Chute support TG 91



Operating instructions SN 9810-TG-2000 Pneumatic part conveyor

List of spare parts SN 9810 - TG -2000

List of parts		
Position	Number	Item Denomination
1	1	TG20-0001 Housing
2	1	TG20-0002 Cover
3	1	TG20-0003 Carrier
4	1	TG20-0004 Plate
5	1	TG20-0005 Connection part
6	1	TG20-0006 Piston
7	1	TG00-0007 Limit stop
8	1	TG00-0008 Valve head 1
9	1	TG00-0009 Valve head 2
10	2	TG20-0010 Pillar
11	2	TG20-0011 Bush
12	2	TG20-0012 Spring holder
13	1	TG00-0013 Valve rod 1
14	1	TG00-0014 Valve rod 2
15	1	TG00-0015 Spring sleeve
16	1	TG20-0016 Bearing
17	2	TG00-0017 Valve Seal
18	2	TG20-0018 O-ring seal for connection part
19	1	TG20-0019 O-ring piston rod
20	2	TG20-0020 O-ring pillar
21	2	TG20-0021 O-ring piston
22	1	TG00-0022 Seal cover
23	1	TG00-0023 Seal housing
24	1	TG00-0024 Pressure spring rear
25	1	TG00-0025 Pressure spring ahead
26	2	TG20-0026 Pressure spring pillar
27	1	TG00-0027 Conical socket
28	4	TG20-0028 Countersunk screw for coverplate
29	1	TG00-0029 Cylinder head screw
30	2	TG00-0030 Cylinder head screw
31	2	TG20-0031 Cylinder head screw
32	5	TG20-0032 Countersunk screw
34	1	TG20-0034 Adjusting valve
35	1	TG00-0035 Damping plate



STRACK® NORMALIEN

Attention!

Opening of the device within the warranty period will result in the loss of warranty. Therefore, consider the valid warranty provisions.

Operating instructions SN 9810-TG-2000 Pneumatic part conveyor

WARRANTY PNEUMATIC PART CONVEYOR SN 9810-TG

The pneumatic part conveyor TG is exclusively intended for the industrial use.

An application in the non-commercial sector is explicitly not allowed and can lead to considerable safety risks!

In case of infringement, the manufacturer accepts no liability and no warranty.

1. Definitions

- **Wear parts:** parts which are mounted in the technical devices of STRACK NORMA and which are subjected to wear (usage) due to their function during the operation, which is depending on the operating period (= operating hours). Particularly O-rings, pressure springs and slide bearings belong to the wear parts.
- **Maintenance:** Control and maintenance by STRACK NORMA or qualified specialists of the technical devices purchased from STRACK NORMA.
- **Inspection:** Control and replacement of wear parts at the technical devices purchased from STRACK NORMA.

2. Warranty

We give to all housing parts and valve mechanics parts which are no wear parts, the statutory warranty with the following restrictions:

In case of defects of the pneumatic part conveyor TG or in the event of the absence of guaranteed characteristics STRACK NORMA is at its option is firstly entitled to rework the defective item or to replace it in an appropriate period of time. We are entitled to examine the products at our discretion in your or our premises. If the rework or replacement delivery fail, you are entitled to reduce the purchase price (reduction) or to cancel the contract (conversion). In case of repair/replacement STRACK NORMA acquires ownership of the components/devices which are removed/replaced with the removal/replacement.

For wear parts we are giving a guarantee of 6 months from date of purchase respectively 6 months from the date of replacement (inspection).

The customer obliges to send the pneumatic conveyor TG® to us for inspection in the following time intervals so that the wear parts such as pressure springs, O-rings and if necessary the slide bearings can be replaced.

1.) Inspection for multi-shift operation at the latest 8 months from date of purchase.

2.) Inspection for one-shift operation at the latest 16 months from date of purchase.

If the customer doesn't send us the pneumatic part conveyor TG® in the prescribed intervals for inspection, the warranty for all wear parts expires. The warranty for parts of the housing and valve mechanics, which are no wear parts remains unaffected.

However, the guarantee generally expires, when the customer opens and demounts the pneumatic part conveyor TG®.

The inspection performance by STRACK NORMA is done for a fee and is calculated with a fixed allowance, whose amount can be changed at any time with effect for the future, whereby always the allowance agreed at the purchase is valid during the warranty period. Arising freight- and packaging costs are separately calculated and are only included in the allowance at home (Germany). The devices are sent to us by the customer free-domicile.

The inspection of the submitted devices takes place within 4 business days after receipt of the equipment in our company. We reserve the right to return the devices also at a later time, for example when there are supply shortages of wear- and spare parts.

The customer obliges to operate the devices according to our technical prescriptions (operating instructions, installation instructions and dimension sheets) and to support them with a chute support. If the support of the pneumatic part conveyor is insufficient, the wear increases to a multiple of the normal value so that we cannot assume warranty any longer in this case.

Particularly STRACK NORMA does not give warranty for:

- Defects being the result of an incorrect installation by yourself or a charged third person, operating errors, intervention in- or modification of the products by yourself or a third party not entitled to do this and external influences on the products;
- the suitability of the products for a particular purpose;
- performances rendered according to your specifications.
- Wear parts, such as O-rings and pressure springs provided that they were not renewed in the prescribed inspection intervals.
- Slide bearings provided that they were not controlled and if necessary replaced in the prescribed inspection intervals.
- Damages and wear caused by a missing or defective chute support of the devices.
- Damages and wear caused by a too high operating pressure (higher than the maximum permissible operating pressure indicated in the operating instructions).
- Damages and wear caused by defective and insufficient lubrication of the compressed air.
- Damages and wear caused by poor operating conditions (for example too high humidity at the operation site or too high ambient temperature).

In the manufacturing of its products and in the execution of warranty works STRACK NORMA uses replacement parts or components which are new or in mint condition according to the respective customary industrial standard.

Operating instructions SN 9810-TG-3000 Pneumatic part conveyor

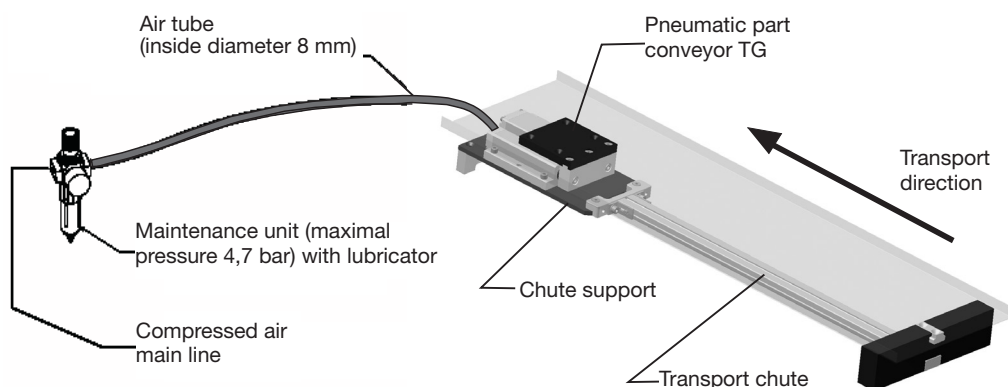
Intended use:

The pneumatic part conveyor TG is exclusively intended for the industrial use. Any use in the non-commercial sector is expressly prohibited. Several parts, in particular punching parts are transported by the pneumatic part conveyor by means of a screwed transport chute. The conveyor utilizes the surface friction of the parts to be transported and the surface friction of the transport chute.

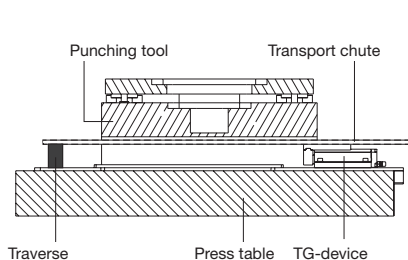
The device works with regulated compressed air and needs a transport chute, a chute support which is stable enough and a compressed air connection adjustable on 4,2 to maximal 4,7 bar with maintenance unit.

The transport direction is always in the direction of the air connection side.

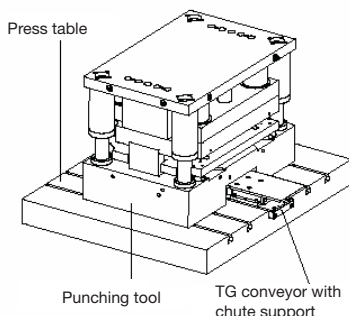
The following graphic explains the construction



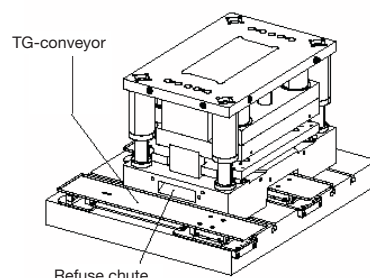
Examples of application:



Cutout through a punching tool with refuse chute and TG-conveyor with chute support.



Stamping waste parts are transported out of the refuse chute and led off to the scrap chute.



Stamping waste parts are transported to the scrap chute laterally to the tool.

The transport performance is basically depending on the surface condition of the parts to be transported, the surface condition of the transport chute or the adjusted stroke frequency.

The transport performance of the TG-3000 is maximally 650 N with chute support.

To avoid the risk of tool breakage or other damages at a standstill of the conveyor during the automatic manufacturing process, a standstill monitoring for the device must be provided which gives a signal to the machine control at disturbances or failure of the device to trigger an automatic stop of the machine.

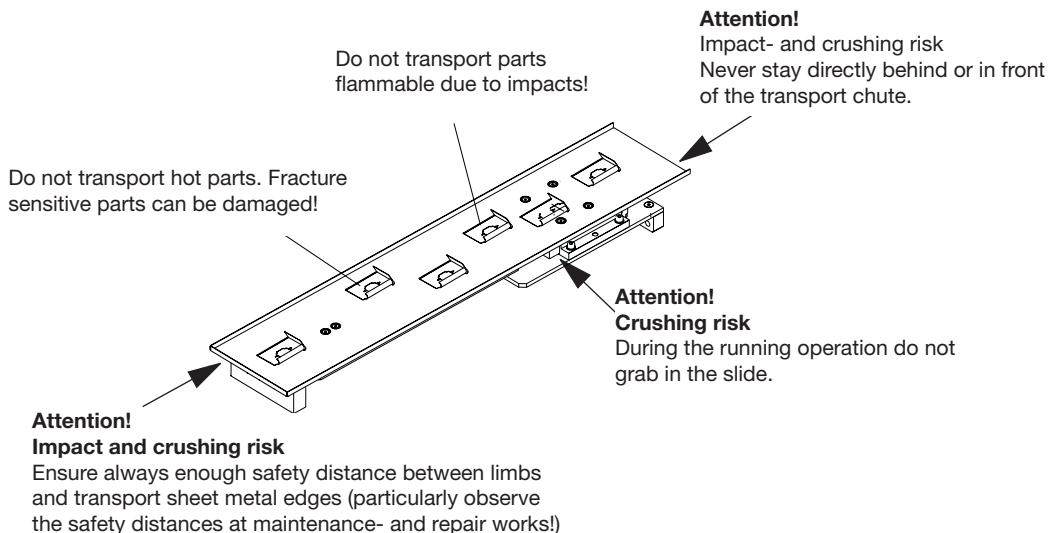
The pneumatic part conveyor TG-3000 complies with the safety requirements of the ninth regulation of the Device Safety Law.

With proper handling and consideration of the installation instructions described in this manual, a trouble-free operation and a long service life of the pneumatic part conveyor can easily be reached.

Please absolutely observe the following safety instructions because in case of improper use dangers to persons and damages to the device and objects can arise!

Operating instructions SN 9810-TG-3000 Pneumatic part conveyor

Security:

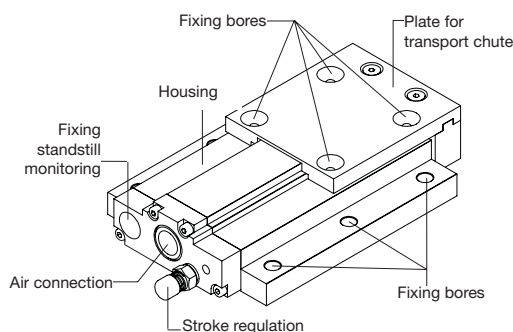


The devices have to be installed in the press (tool) that you are shielded by protective devices, such as safety guards.

Mounting:

The pneumatic part conveyor TG-3000 consists of a movable sliding plate on which the transport chute is fixed. The device is provided with compressed air (maximal 4,7 bar) at the air connection (R1/2") which can be regulated by an upstream maintenance unit with lubricator. A nominal diameter of the connection line of at least 8 mm has to be maintained, because otherwise the volume flow required by the device is not reached. Only one device per maintenance unit may be operated.

At initial operation put some drops of pneumatic oil in the air connection. Fix the device with at least 4 screws M8 on a base construction (tool base plate). The screws should be secured with a retaining ring against torsion.



Design the base construction in such a manner that the bearing surface is flat and doesn't show any unevenness.

Fix the transport sheet with 4 countersank screws M6 on the sliding plate. Make sure that the thread length according to the sheet-thickness of the chute plus plate (eventually spacer) is so designed that the screw end cannot grind on the housing. The lighter the transport sheet, the less the wear in the device!
Due to a double bending also thin sheets of under 1 mm can have a high rigidity.

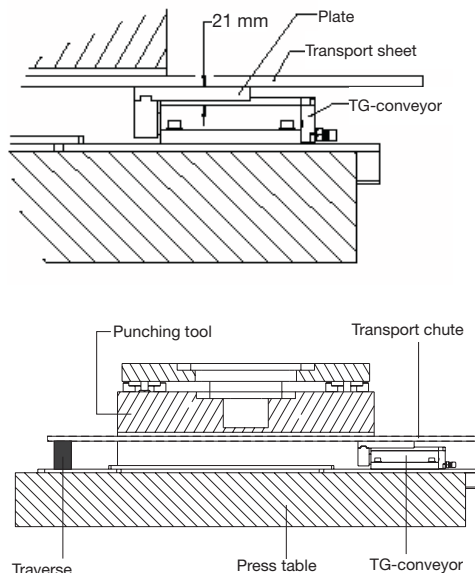
The chute weight should not exceed 7 kg.

The transport chute must be secured against vibration and tilting by a support in the front and rear area. Only with extremely short transport chutes (device length + 150 mm), which are very light, you can renounce a support if a swinging of the chute is excluded.

Attach the support in such a way that the device guiding is not tensed.

The transport chute may not bow.

The right illustration shows the chute support type TG91/TG92.



Operating instructions SN 9810-TG-3000 Pneumatic part conveyor

The safety distances shown in the illustration presume appropriate protection devices reliably excluding an impact- and crushing danger during the operation.

Otherwise, observe the regulations for safety distances according to DIN EN 349!

During installation of the device consider the stroke length. Therefore, not place the transport chute too close to possible obstacles. The stroke length can increase depending on the weight of the transport chute – definitely observe!

The transport speed is depending on the stroke frequency. The device can be regulated from approximately 20 to 120 strokes/min. Depending on the condition of the parts to be transported, the optimal transport speed has to be determined by trial with different stroke frequencies.

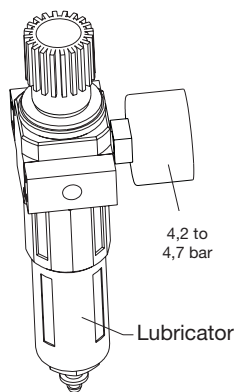
A high stroke speed must not necessarily result in a high transport speed. In the worst case, a too high stroke frequency leads to a breakup of the transport, so that the parts are only swinging on the chute.

The stroke frequency is controlled by means of the adjusting screw on the front side of the machine.

Connect with screw connection and coupling to compressed air.

Adjust maintenance unit on 4,2 to maximal 4,7 bar and fill it with oil.

Use only oil suited for compressed air. Adjustment: about 1 drop per minute at 60 strokes



Failure

The carriage does not move:

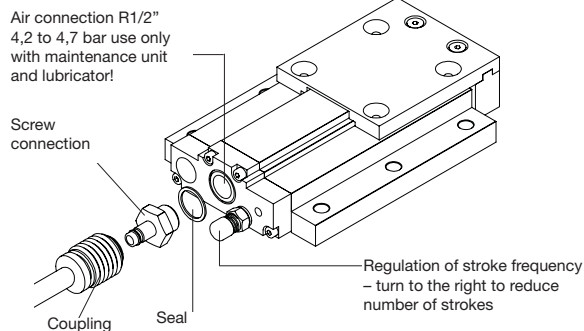
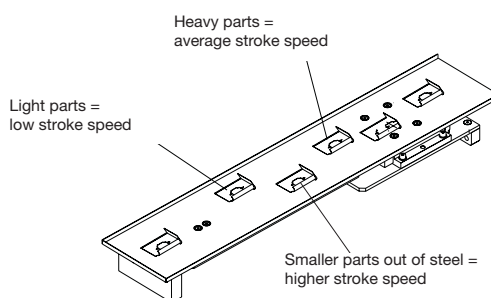
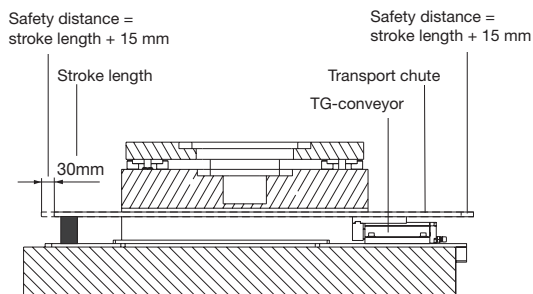
- Check if air is available und if there is the correct pressure (4,2 to 4,7 bar)
- Check the nominal diameter of the supply air line (at least 8 mm)
- Check the lubricator of the maintenance unit (possibly give a drop of oil in the air connection)
- Check if the transport chute is free to move or is possibly jammed or tilted.

Stroke frequency cannot be regulated properly:

- If the device has not been operated for a longer time, a short running-in period of about 10 minutes can be required.

Device stops after some time:

- The lubrication is not sufficient (check the lubricator). Before putting into service give some oil in the air connection.



Maintenance:

Only operate the device with maintenance unit and lubricator!

Here it has to be ensured that a sufficient permanent lubrication is guaranteed by the maintenance unit.

Depending on the used number of strokes, the oil supply has to be adapted accordingly.

Guideline: 1 drop of oil per minute at a stroke number of 60/min.

Use emulsifying thin-fluid oil to guarantee an optimal lubrication. Empty the water separator of the maintenance unit daily!

Do not operate the device under great heat, otherwise the grease in the device is lost and the O-rings will be destroyed.

Not open the conveyor TG-3000 by yourself, it has a valve mechanics which is precisely adjusted by the manufacturer.

Operating instructions SN 9810-TG-3000 Pneumatic part conveyor

Inspection intervals:

According to the warranty requirements, the pneumatic part conveyor TG-3000 has to be sent to the manufacturer for the following inspections::

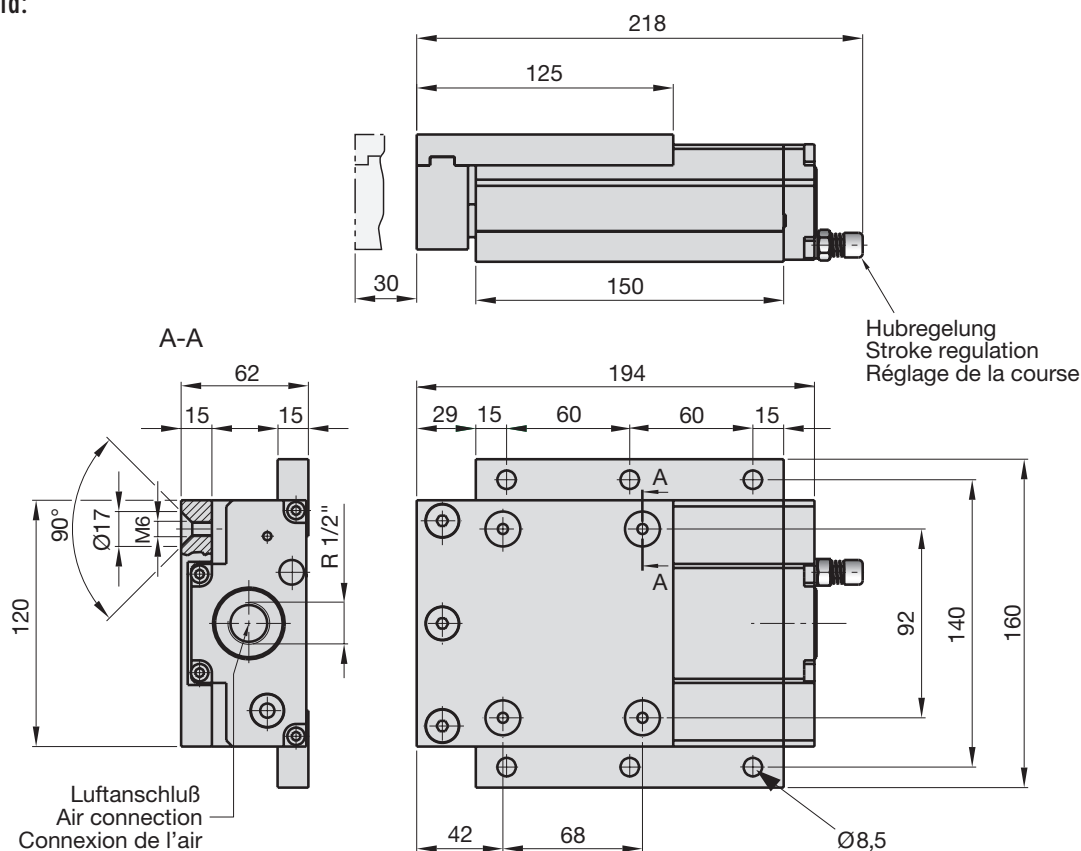
1.) Inspection in case of multi-shift operation at the latest 8 months from date of purchase

2.) Inspection in case of one shift operation at the latest 16 months from date of purchase

During these inspections the wearing parts, such as pressure springs, O-rings and bearings (if necessary) are changed.

Check at regular intervals the screw connections of the chute support and the transport chute. Loose screw connections can cause the failure of the device und thus lead to damages.

Technical data:

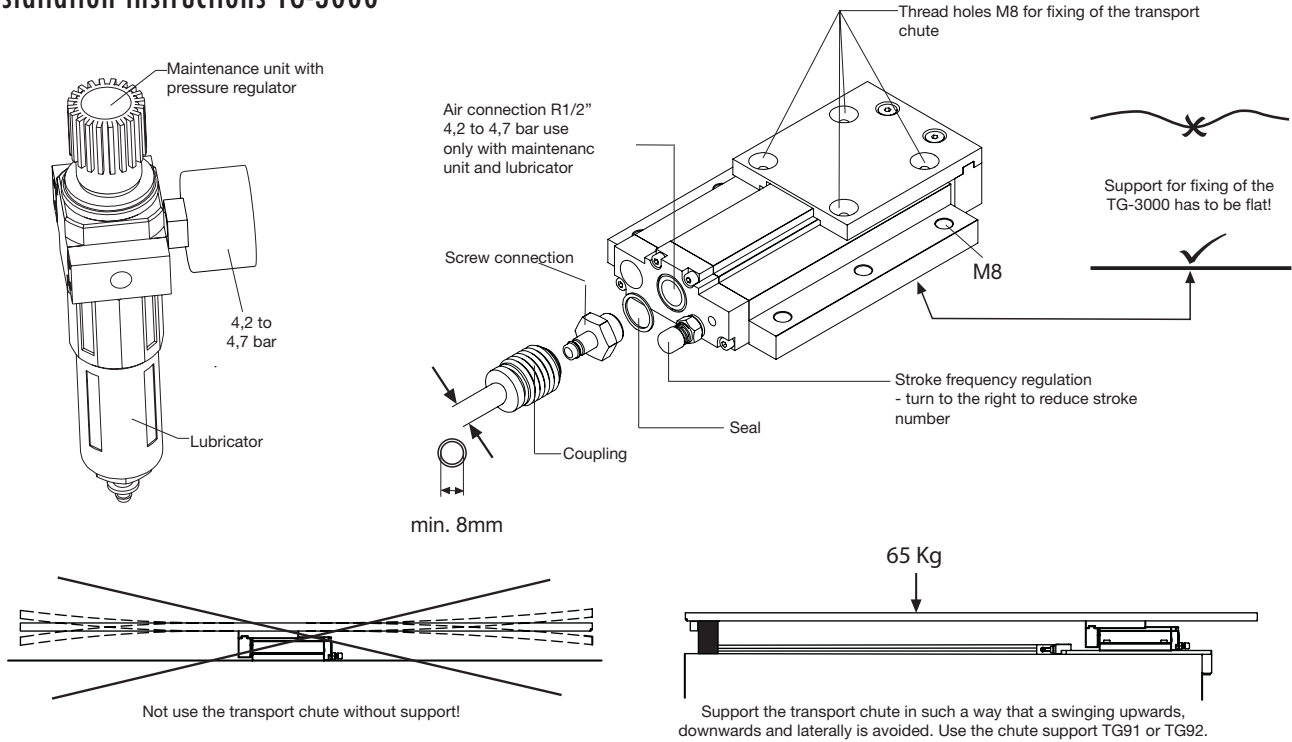


Typ TG - 3000

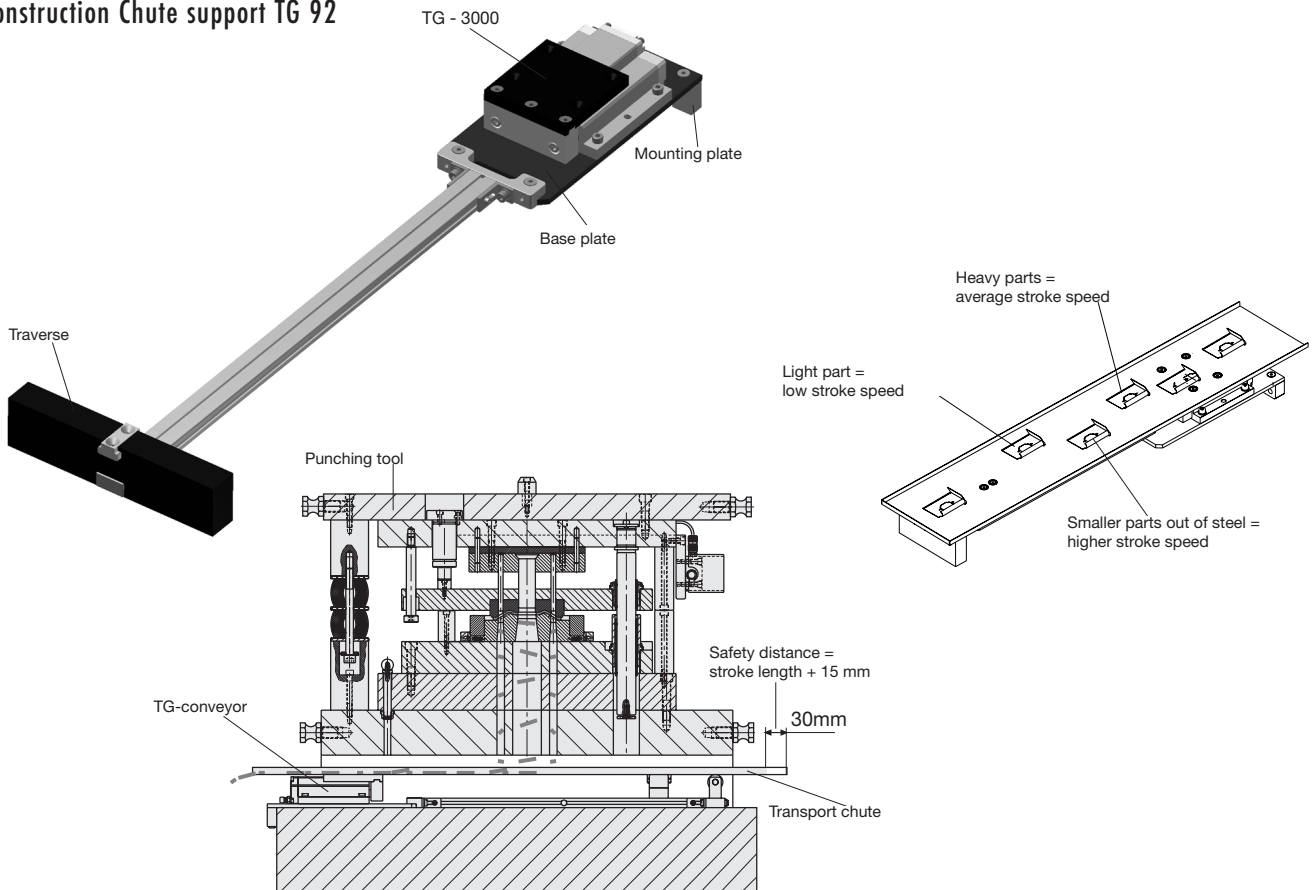
Operating pressure	4,2 – 4,7 bar
Air consumption	0,7 – 7 l/min.
Stroke length	30 mm
Transport speed	< 0,5 – 3 m/min.
Maximal inclination of the transport chute	8°
Noise level	< 70 dB (A)
Weight	4,5 kg
Maximal load with chute support	650 N

Operating instructions SN 9810-TG-3000 Pneumatic part conveyor

Installation instructions TG-3000



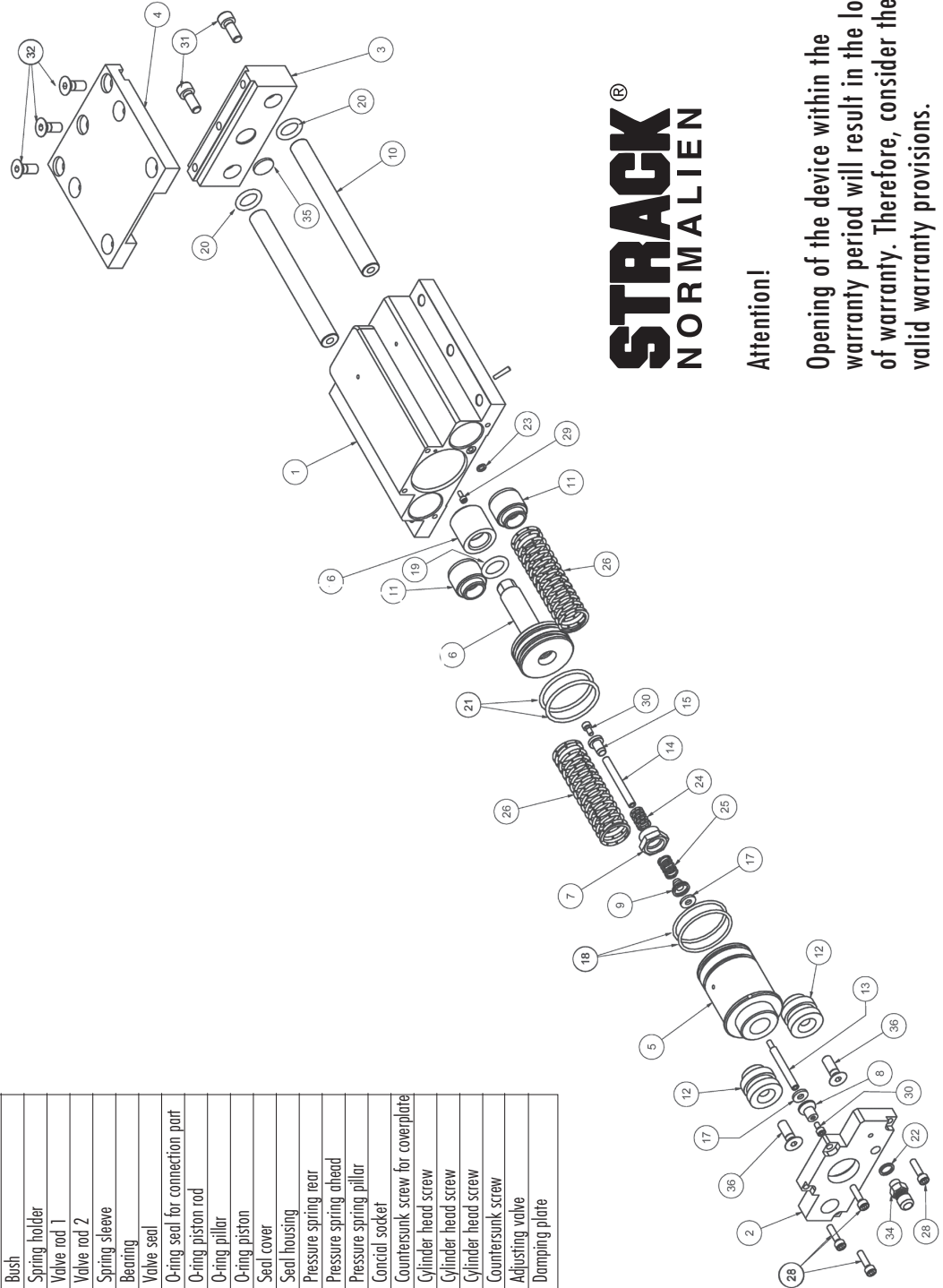
Construction Chute support TG 92



Operating instructions SN 9810-TG-3000 Pneumatic part conveyor

List of spare parts SN 9810 - TG -3000

List of parts		
Position	Number	Item Denomination
1	1	T630-0001 Housing
2	1	T630-0002 Cover
3	1	T630-0003 Carrier
4	1	T630-0004 Plate
5	1	T630-0005 Connection part
6	1	T630-0006 Piston
7	1	T600-0007 Limit stop
8	1	T600-0008 Valve head 1
9	1	T600-0009 Valve head 2
10	2	T620-0010 Pillar
11	2	T630-0011 Bush
12	2	T630-0012 Spring holder
13	1	T600-0013 Valve rod 1
14	1	T600-0014 Valve rod 2
15	1	T600-0015 Spring sleeve
16	1	T620-0016 Bearing
17	2	T600-0017 Valve seal
18	2	T630-0018 O-ring seal for connection part
19	1	T620-0019 O-ring piston rod
20	2	T620-0020 O-ring pillar
21	2	T630-0021 O-ring piston
22	1	T600-0022 Seal cover
23	1	T600-0023 Seal housing
24	1	T600-0024 Pressure spring rear
25	1	T600-0025 Pressure spring ahead
26	2	T630-0026 Pressure spring pillar
27	1	T600-0027 Conical socket
28	4	T620-0028 Countersunk screw for coverplate
29	1	T600-0029 Cylinder head screw
30	2	T600-0030 Cylinder head screw
31	2	T620-0031 Cylinder head screw
32	5	T620-0032 Countersunk screw
34	1	T630-0034 Adjusting valve
35	1	T600-0035 Dumping plate



STRACK® NORMALIEN

Attention!

Opening of the device within the warranty period will result in the loss of warranty. Therefore, consider the valid warranty provisions.

Operating instructions SN 9810-TG-3000 Pneumatic part conveyor

WARRANTY PNEUMATIC PART CONVEYOR SN 9810-TG

The pneumatic part conveyor TG is exclusively intended for the industrial use.

An application in the non-commercial sector is explicitly not allowed and can lead to considerable safety risks!

In case of infringement, the manufacturer accepts no liability and no warranty.

1. Definitions

- **Wear parts:** parts which are mounted in the technical devices of STRACK NORMA and which are subjected to wear (usage) due to their function during the operation, which is depending on the operating period (= operating hours). Particularly O-rings, pressure springs and slide bearings belong to the wear parts.
- **Maintenance:** Control and maintenance by STRACK NORMA or qualified specialists of the technical devices purchased from STRACK NORMA.
- **Inspection:** Control and replacement of wear parts at the technical devices purchased from STRACK NORMA.

2. Warranty

We give to all housing parts and valve mechanics parts which are no wear parts, the statutory warranty with the following restrictions:

In case of defects of the pneumatic part conveyor TG or in the event of the absence of guaranteed characteristics STRACK NORMA is at its option is firstly entitled to rework the defective item or to replace it in an appropriate period of time. We are entitled to examine the products at our discretion in your or our premises. If the rework or replacement delivery fail, you are entitled to reduce the purchase price (reduction) or to cancel the contract (conversion). In case of repair/replacement STRACK NORMA acquires ownership of the components/devices which are removed/replaced with the removal/replacement.

For wear parts we are giving a guarantee of 6 months from date of purchase respectively 6 months from the date of replacement (inspection).

The customer obliges to send the pneumatic conveyor TG® to us for inspection in the following time intervals so that the wear parts such as pressure springs, O-rings and if necessary the slide bearings can be replaced.

1.) Inspection for multi-shift operation at the latest 8 months from date of purchase.

2.) Inspection for one-shift operation at the latest 16 months from date of purchase.

If the customer doesn't send us the pneumatic part conveyor TG® in the prescribed intervals for inspection, the warranty for all wear parts expires. The warranty for parts of the housing and valve mechanics, which are no wear parts remains unaffected.

However, the guarantee generally expires, when the customer opens and demounts the pneumatic part conveyor TG®.

The inspection performance by STRACK NORMA is done for a fee and is calculated with a fixed allowance, whose amount can be changed at any time with effect for the future, whereby always the allowance agreed at the purchase is valid during the warranty period. Arising freight- and packaging costs are separately calculated and are only included in the allowance at home (Germany). The devices are sent to us by the customer free-domicile.

The inspection of the submitted devices takes place within 4 business days after receipt of the equipment in our company. We reserve the right to return the devices also at a later time, for example when there are supply shortages of wear- and spare parts.

The customer obliges to operate the devices according to our technical prescriptions (operating instructions, installation instructions and dimension sheets) and to support them with a chute support. If the support of the pneumatic part conveyor is insufficient, the wear increases to a multiple of the normal value so that we cannot assume warranty any longer in this case.

Particularly STRACK NORMA does not give warranty for:

- Defects being the result of an incorrect installation by yourself or a charged third person, operating errors, intervention in- or modification of the products by yourself or a third party not entitled to do this and external influences on the products;
- the suitability of the products for a particular purpose;
- performances rendered according to your specifications.
- Wear parts, such as O-rings and pressure springs provided that they were not renewed in the prescribed inspection intervals.
- Slide bearings provided that they were not controlled and if necessary replaced in the prescribed inspection intervals.
- Damages and wear caused by a missing or defective chute support of the devices.
- Damages and wear caused by a too high operating pressure (higher than the maximum permissible operating pressure indicated in the operating instructions).
- Damages and wear caused by defective and insufficient lubrication of the compressed air.
- Damages and wear caused by poor operating conditions (for example too high humidity at the operation site or too high ambient temperature).

In the manufacturing of its products and in the execution of warranty works STRACK NORMA uses replacement parts or components which are new or in mint condition according to the respective customary industrial standard.

STRACK®

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