

OPERATING INSTRUCTIONS
PS 60

Dear Valued Customer,

Thank you for choosing **GSW** Parts and Scrap Conveyors for your conveying needs.

Your conveyor has been designed, engineered and manufactured to the highest quality standards in the industry, providing trouble free operation.

Our "MOTTO" here at **GSW** is "Accept No Compromise", anything less than 100% is not acceptable. Our goal is to provide the best possible equipment to you "Our Customer".

The warranty of your new unit, unless otherwise stated is (1) one year from date of shipment.

If you feel a part or repair should be covered under warranty, **GSW** reserves the right to inspect the unit in our facility. It shall be shipped prepaid to our Service Partner CII Automation, 5100 N Hwy. 7, North Vernon, IN 47265. A return authorization is required. Any part or parts alleged to be defective must be returned to CII, prepaid within thirty days unless otherwise instructed.

This manual is to provide you with operating information including a full parts list of your conveyor. Following these instructions will help to avoid improper use, costly repairs and down time. Should you require a spare part, please have the following information ready when ordering:

Model Number and Serial Number

Item Number and Part Number

You can order from your authorized **GSW / CII** Dealer or you may call us direct.

Again, thank you for your valued business and please call us with any questions that you may have.

The **GSW Team**

GSW Press Automation

**OPERATING INSTRUCTIONS
PS 60**

Table of Contents

Introduction:	Page
1.0 Description of the Linear Parts Conveyor	1
1.1 Functional Principles	1
1.2 Applications	1
2.0 Requirements of Application	1
3.0 Safety Instructions	2
3.1 Principle	2
3.2 Safety Instructions for the Operating Personnel	2
3.3 General Information	2
3.4.1 Pneumatic	3
3.4.2 Oil, Grease and other Chemical Substances	3
3.5 Special Environmental Influences	3
3.6 Organizational Measures	3
4.0 Transport	3
4.1 General	3
4.2 Shipping Damage	4
5.0 Air Regulations	4
6.0 Conveyor Tray	4
6.1 Design	4
6.2 Mounting	5
7.0 Technical Specifications	5- 6
8.0 Start-Up	6
8.1 General	6
8.2 Adjustments	6
8.2.1 Reverse Stroke	6
8.2.2 Forward Stroke	7
9.0 Maintenance	7
9.1 Greasing of the Internal Ball Guide Bushings	7
9.2 General Overhaul	7
10.0 Mounting Dimensions	8
11.0 Parts List Drawings	9
11.1 Front and Side Views	9
11.2 Top View	10
11.3 Sectional Drawing	11
12.0 Parts List	12
12.1 POWERSPEED PS 60	12- 13
12.2 Accessories	14
12.3 Seal Kit	14
12.4 Repair Kit	15

OPERATING INSTRUCTIONS
PS 60

1.0 Description of the Linear Parts Conveyor

1.1 Functional Principles

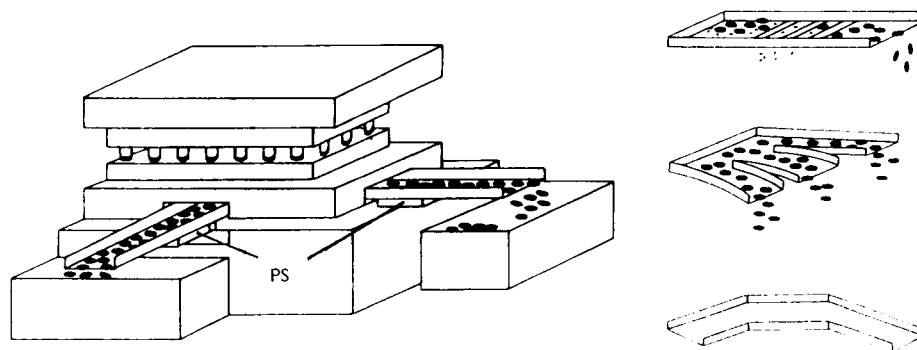
The POWERSPEED works on the basis of a difference in speed between forward and reverse stroke movements. The stroke performed by the machine in the conveying direction is slower than that in the opposite direction.

This produces a transport action by static friction during the forward stroke.

The reverse stroke is so fast that the material being transported retains its effective position in space. In this phase, the tray is pulled back under the material (sliding friction).

1.2 Applications

The POWERSPEED drives conveyor trays in an inaccessible environment. It is mainly used on press tools.



Possible Applications:

Cleaning Guiding Feeding or Removing Sorting Separating

2.0 Requirements of Application

The POWERSPEED is used solely as a pneumatic drive for a conveyor tray. Any other use is deemed improper. The manufacturer accepts no liability for damage resulting from improper use. The risk is entirely up to the operator/owner. All safety procedures established by your company and OSHA must be observed.

Proper use of the machine includes compliance with the manufacturer's operating instructions, in particular with permissible load according to the Technical Specifications.

<p style="text-align: center;">OPERATING INSTRUCTIONS PS 60</p>

3.0 Safety Instructions

3.1 Principle

The POWERSPEED is engineered with state-of-the-art technology. Although it is built in accordance with established technical safety codes, danger to the operator and others can nevertheless arise during operation; likewise damage to the POWERSPEED and other property.

Therefore:

- Only use the POWERSPEED when it is in sound technical order
- Comply with all applicable accident prevention regulations when operating the POWERSPEED
- Only use the POWERSPEED for its designated purpose

Faults, particularly those that impair safety, must be repaired immediately by qualified technicians.

❖ **The POWERSPEED must be shut down until the fault has been eliminated!**

3.2 Safety Instructions for the Operating Personnel

Do not apply any working methods that:

- endanger the operator or others
- can damage the POWERSPEED or others
- impair the safety of the machine

The POWERSPEED is to be inspected for external signs of damage and faults at least once a shift. Changes (including the operating behavior of the machine) are to be reported to the responsible office or person immediately.

❖ **In the event of malfunctions, shut down the POWERSPEED! Have the faults repaired by a qualified technician immediately.**

3.3 General Information

The adjustments and maintenance work prescribed in these operating instructions must be complied with. This also includes all inspection work, schedules and specifications on the replacement of parts or components.

Repair any faults immediately!

Spare parts must meet the technical requirements prescribed by [GSW](#). This is guaranteed if original spare parts are used. Unauthorized changes to the POWERSPEED invalidate the liability of the manufacturer, and the warranty shall be void.

<p style="text-align: center;">OPERATING INSTRUCTIONS PS 60</p>

3.4.1 Pneumatic

Only qualified personnel are allowed to work on pneumatic devices.

❖ **In the event of malfunctions at the pneumatic supply, shut down the POWERSPEED immediately.**

In spite of the latest modern designs, there can still be a risk e.g. pneumatic lines can become loose or may burst.

If the air supply should malfunction, (e.g. sudden fall of pressure) the machine has to be secured in a way, that all machines in the line come to a stop and there is no dangerous situation for the operator.

3.4.2 Oil, Grease and other Chemical Substances

It is absolutely necessary to follow the safety regulations, which are valid for the product when handling oil, grease or other chemical substances.

3.5 Special Environmental Influences

Do not operate the POWERSPEED in areas where there is danger of explosion, unless it is made in a special way for this operation. The maximum thermal load is 158 Degree F (70 Degree C).

3.6 Organizational Measures

These operating instructions must be kept readily available in the vicinity of the POWERSPEED at all times!

In addition to these operating instructions, all general legal and other mandatory regulations on accident prevention and environmental protection are to be complied with.

Prescribed or mentioned periods in the operating instructions for repeated checks and inspections absolutely must be observed.

4.0 Transport

4.1 General

The POWERSPEED is light enough to be carried by hand.

OPERATING INSTRUCTIONS
PS 60

4.2 Shipping Damage

Our responsibility extends to handing over the machine to the carrier in perfect condition. Should you determine the POWERSPEED was damaged during transit, do not use the machine, but contact the carrier and GSW to report your claim.

Check the POWERSPEED immediately upon delivery. Any external damage found should be reported and certified on the shipping papers immediately! Concealed defects arising from shipping damage are to be reported to the carrier no later than five days from date of delivery.

5.0 Air Regulations

The PS 60 requires clean and oiled air (filter– regulator-lubricator (FRL) unit with air filter and oiler unit, and must observe the direction of flow). Refer to [GSW](#) Maintenance Unit. Order No. WE 9903 (3/8" small bowl). Order No. WE 9904 (3/8" large bowl).

This is achieved by installing a separate filter–regulator- lubricator (FRL) unit in the direct vicinity of the PS 60 (max. line length: 10'). The airline between the filter–regulator– lubricator (FRL) unit and the PS 60 must be of a non-rusting material and should have an inside diameter of at least 0.32 inches.

Pressure regulator setting: 55 – 70 PSI depending on transport load

Oiler setting: 1 drop every 2 minutes

Oil Recommendation for filter- regulator-lubricator (FRL) – Schrader Bellows F422 (or equivalent).

(Use petroleum based oil of 100 to 200 SSU viscosity at 100 Degree F with an aniline point greater than 200 Degree F)

6.0 Conveyor Tray

6.1 Design

When choosing the material, one has to pay attention that the tray is as light and as sturdy as possible, so it can't be deformed by parts falling out of the die onto the tray.

The conveyor tray can be adapted to your mounting and transport conditions. The outer edges should be high enough to keep the parts from bouncing over the edge when they drop out of the die onto the tray.

**OPERATING INSTRUCTIONS
PS 60**

6.2 Mounting

The M 8 x 12 countersunk screws used to mount the conveyor tray must be flush with the tray surface. We recommend that you apply a medium-strength thread locker to the screw.

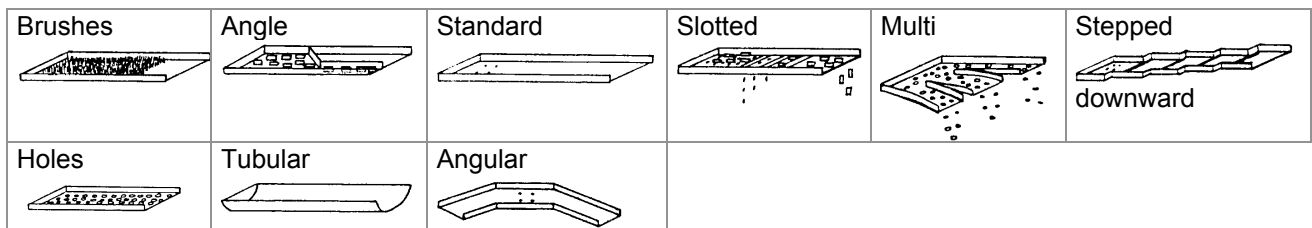
Trays that extend over the POWERSPEED by more than 12 inches should be supported by a linear tray guide, e.g. the GSW tray guide. Do not place any stress on the tray because this reduces performance and causes unnecessary wear.

If longer trays are not equipped with a linear support, vertical tray vibration is likely to occur. This impairs the conveying performance considerably and can cause unnecessary stress and wear on the transporter thus shortening the life of the unit.

The tray movement should be smooth because vibrations or bumps may impair parts during transportation.

- **GSW** offers a linear ball tray guide that joins the tray to the mounting table and guarantees optimal transportation of your parts -

Types of Conveyor Trays:



7.0 Technical Specifications

Allowable weight of tray:	max. 54 lbs.
Recommended parts weight:	0.04 – 106 ounces
Maximum total load:	132 lbs. (conveyor tray incl. parts on the tray) ideal for maximum load regarding transport speed and time laid in 3-shift operation: 99 lbs.
Conveying speed:	26 – 33 f.p.m. (can vary depending on the material being transported)

OPERATING INSTRUCTIONS
PS 60

Further important hints:

- Maximum working pressure should exceed in no case 70 PSI.
- The linear parts conveyor should in no case connect pneumatically in series.
- If it is not possible to place a FRL unit to each linear parts conveyor because of restricted space or other constructional conditions, the supply lines should have at least the same length. You will need to increase the oil setting accordingly.
- Basically each linear parts conveyor should have a separate FRL unit if possible, placed above and not below the linear parts conveyor.

8.0 Start Up

8.1 General

Depending on the smoothness of the conveyor tray and the parts that are to be transported, a test run should be carried out before the machine is started. Quick stroke changes by the POWERSPEED will not lead to optimal conveying capacity.

The conveying direction is in the direction of the air connection.

First fill the oiler with Schrader Bellows F422 oil (or equivalent). A petroleum based oil of 100 to 200 SSU viscosity at 100 degree F with an aniline point greater than 200 degrees F, (depressurize beforehand), then pressurize the filter–regulator–lubricator unit to about 58 PSI.

8.2 Adjustment

8.2.1 Reverse Stroke

The reverse stroke (opposite the conveying direction) is regulated with the throttle screw. It should be strong enough to overcome the surface friction, there-by pulling the tray(s) out from under the parts and maintaining the location of the parts in space. To increase the power, turn the throttle screw counter clockwise until the optimal function is attained. The percussion power of the transporter can also be adjusted by increasing the air pressure at the filter-lubricator-regulator unit. The throttle screw setting should not allow the POWERSPEED to hammer (hit the internal shock absorbers with extreme force resulting in unnecessary wear and reducing the transporter's performance.)

If there isn't enough power, slightly increase the pressure at the FRL unit.

OPERATING INSTRUCTIONS
PS 60

8.2.2 Forward Stroke

The exhaust air for the forward stroke (in the conveying direction) is regulated with the knurled screw with the integrated muffler. This adjustment controls the speed at which the parts are conveyed away from the die. The setting should be such that the parts being transported are carried forward during the tray movement. Turning the knurled screw counter clockwise lets the tray move faster (not letting parts regain friction) and clockwise slows the tray down (the tray must move fast enough to allow the mechanical valve to be activated to shift direction of stroke – failure to shift may cause the Transporter to stall in the conveying direction so the part can move with the tray. Caution – do not over turn the knurled screw in the clockwise direction or you could damage the O-Ring in the integrated muffler.

If the PS 60 is integrated in a tool and this complicates the adjustment, the silencer-throttle can be screwed out and fitted to the end of an air hose with pneumatic connections. This allows the speed to be adjusted outside the tool. The air hose must have an inside diameter of 0.24 inches / outside diameter of 0.32 inches and may not be longer than 20 inches.

9.1 Greasing of the Internal Ball Guide Bushings

Depending on operating duty, regrease every three months. To do this, loosen the screws that fasten the guide rods to the carrier, pull out the rods and smear the bearings heavily with grease using a small screwdriver (only use resin-free non-corrosive bearing grease). When finished, press the screwdriver in the bearing bore turning axially, then push the rods back in and tighten the fastening screws.

9.2 General Overhaul

If your POWERSPEED requires a general overhaul, contact our new partner

CII Automation

5100 N. State Highway 7, North Vernon, IN 47265

Phone 812-392-2986, Fax 812-392-2989.

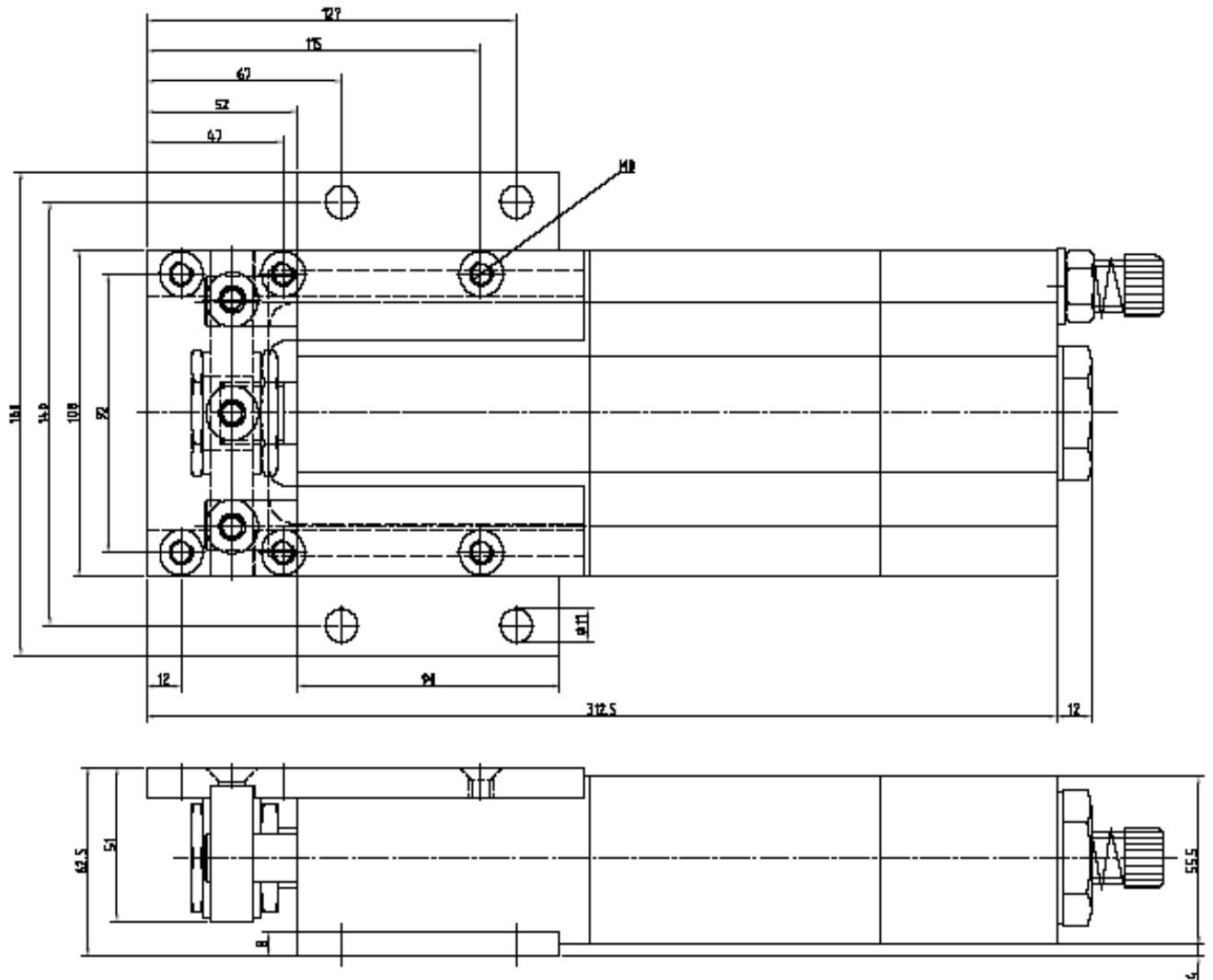
Email: cii@wattselectric.com

Please have serial number and size of unit available.

**- GSW / CII offer a 24-hour turn around service on rebuilding of your units -
Most repair parts can be shipped same day, orders are placed.**

**OPERATING INSTRUCTIONS
PS 60**

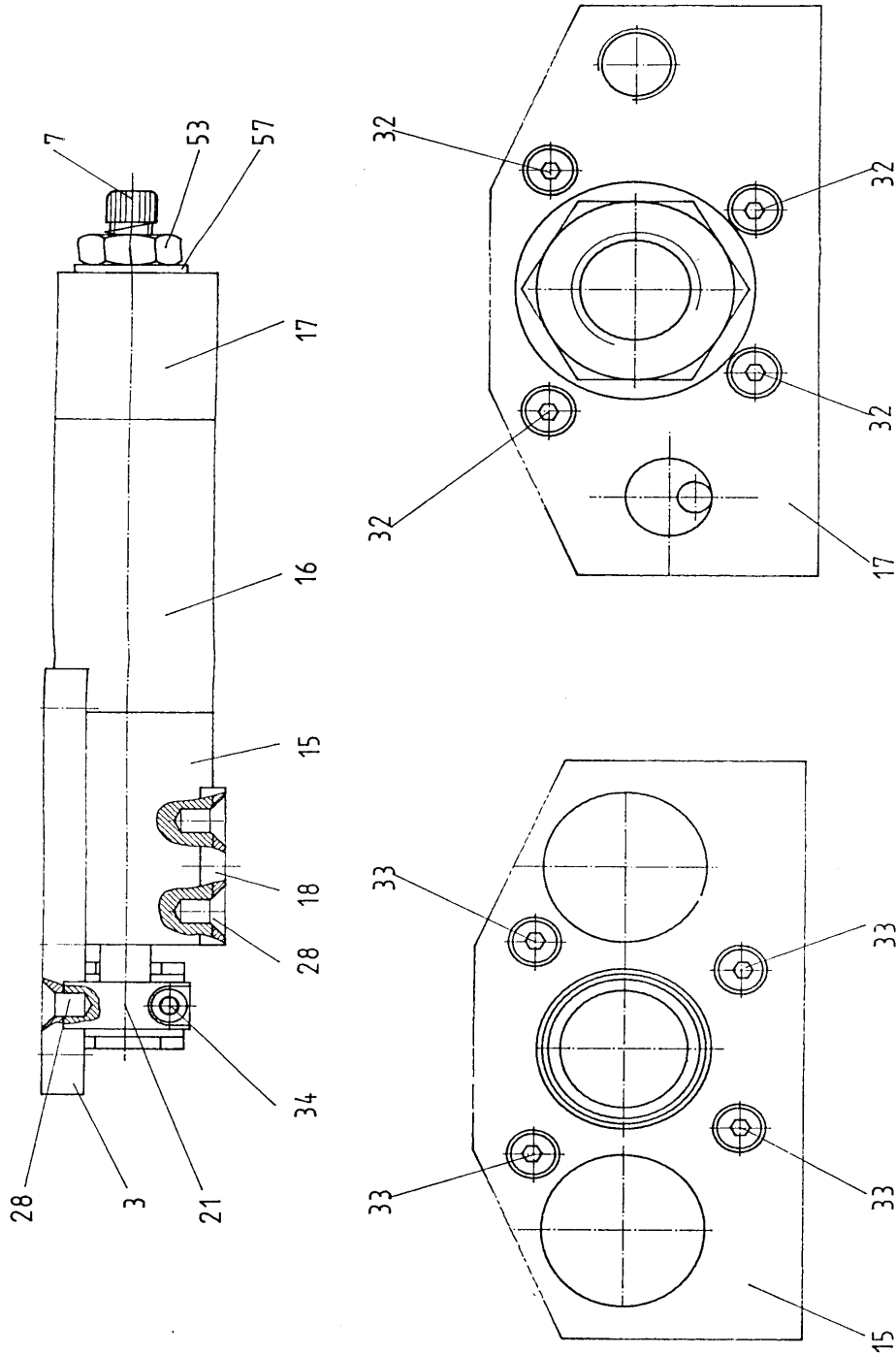
10.0 Mounting Dimensions (in mm)



**OPERATING INSTRUCTIONS
PS 60**

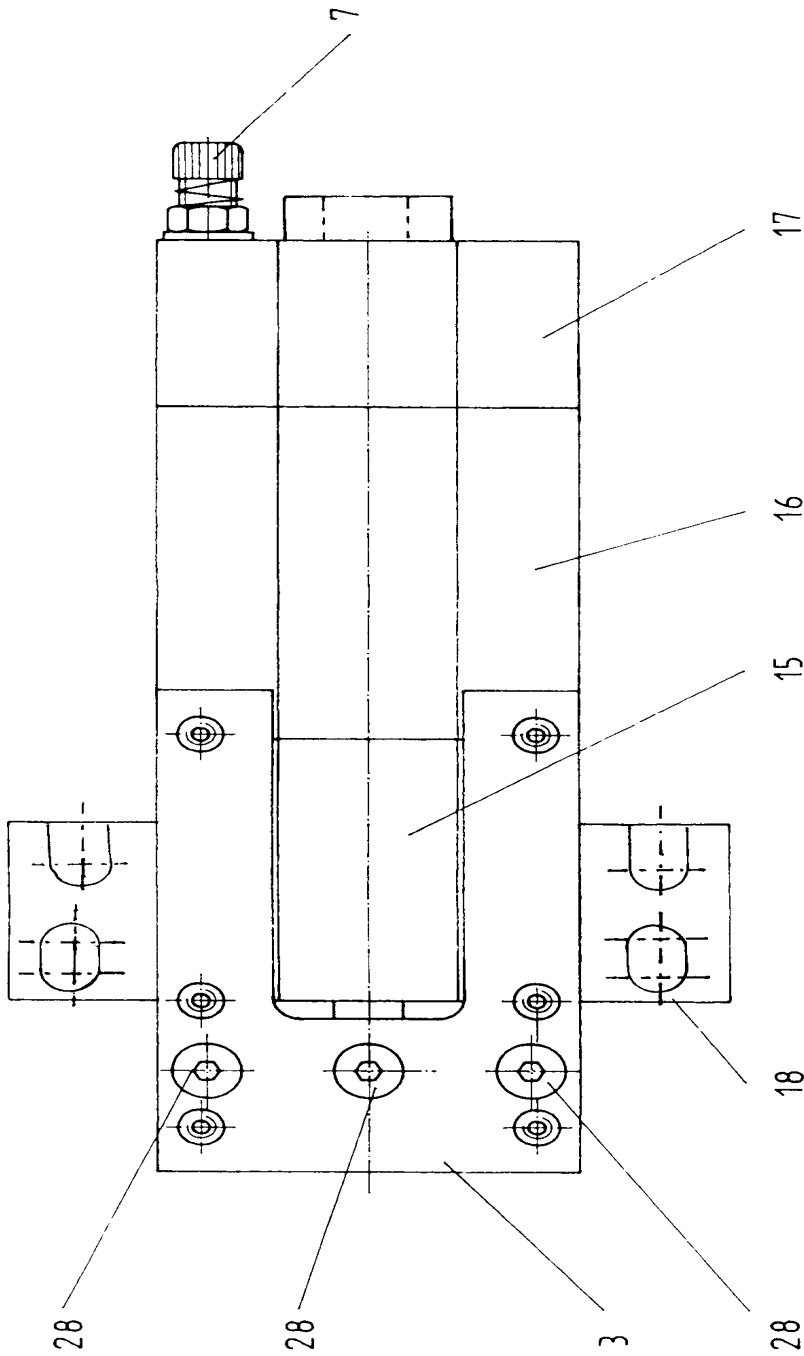
11.0 Parts List Drawings

11.1 Front and Side View



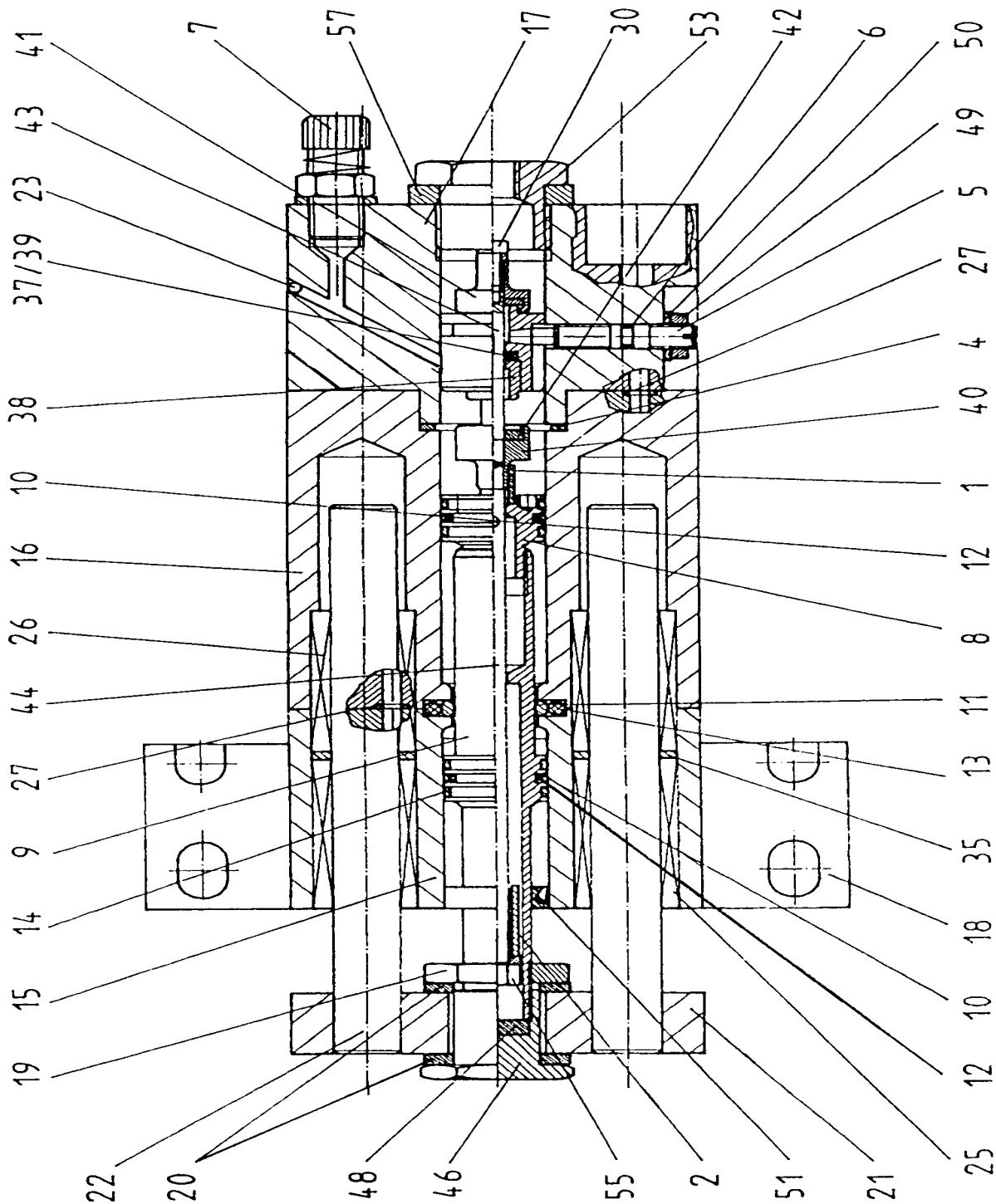
OPERATING INSTRUCTIONS
PS 60

11.2 Top View



OPERATING INSTRUCTIONS
PS 60

11.3 Sectional Drawing



OPERATING INSTRUCTIONS
PS 60

12.0 Parts List

12.1 POWERSPEED PS 60

Drw. No.	Art. No.	Description	Qty.
1	28065-4	Shock absorber, 19 mm	1
2	28066-4	Shock absorber, 29 mm	1
3	28075-3	Mounting plate	1
4	28067-4	Sealing ring between bodies 27825-2 and 27826-2	1
5	28073-4	Throttle screw M 10 x 1	1
6	81943	O-ring for throttle screw	2
7	81944	Throttle valve with silencer	1
	81957	Seal 3/8" For 81944 Throttle Valve	1
8	28072-4	Piston, short M 20	1
9	28091-4	Piston, long 192 mm	1
10	81959	Piston packing ring	2
11	81960	Piston rod packing ring, Ø 19.7 mm	1
12	81961	Piston O-ring	2
13	81962	Piston rod O-ring	1
14	81963	Piston guide ring	4
15	27824-2	Body, end cylinder, 100 mm	1
16	27825-2	Body, main cylinder	1
17	27826-2	Box, air connection	1
18	28094-4	Base plate, 90 mm	1
19	28090-4	Lock nut M 20 x 1.5	1
20	28089-4	Lock nut damper	2
21	28071-4	Clamping piece	1
22	81964	Bearing shaft, Ø 16 x 160 mm chamfer on both sides	1
23	81758	Ball Ø 6.35 mm	5
24	81757	Ball 4.5 mm	1
25	82991	Ball guide bushing, seal on both sides, Ø 16 mm	2
26	81951	Ball guide bushing, Ø 16 mm	2
27	81952	O-ring for air way	2
28	81747	Countersunk screw M 8 x 16, hexagon socket screw	7

**OPERATING INSTRUCTIONS
PS 60**

12.1 POWERSPEED PS 60 (continued)

Drw. No.	Art. No.	Description	Qty.
30	81746	Socket head cap screw M 4 x 10, hexagon socket screw	1
32	82911	Socket head cap screw M 6 x 65, hexagon socket screw	4
33	82913	Socket head screw M 6 x 100, hexagon socket screw	4
34	81914	Socket head screw M 8 x 25, hexagon socket screw	2
37	81953	Valve bushing sealing ring 6 x 2 x 1	1
38	28069-4	Valve bushing insert	1
39	81954	Valve bushing O-ring 7.65 x 1.78	1
40	28088-4	Valve block with thread	1
41	28087-4	Valve block, plug type	1
42	28086-4	Valve block, one-sided phase	2
43	28054-4	Valve rod, short 63 mm	1
44	28068-4	Valve rod, long, 180 mm	1
46	28079-4	Hex cap nut, 20 mm	1
48	28078-4	Hex cap nut sealing washer	1
51	81965	Rotary shaft seal	1
52	81756	Straight pin, hardened Ø 4 x 16 mm	2
53	81956	Reducing nipple 1" to 3/8"	1
54	81748	Countersunk screw M 8 x 12, hexagon socket screw	6
55	28076-4	Cap nut, M 6, SW 10	1
57	81958	Seal G 1" for air connection	1
	82905	Locking Ring	1
	82920	Locking Ring	2

Option: 1065 2145 S, Art. No. valve control complete (Drw. No. 40-44)

**OPERATING INSTRUCTIONS
PS 60**

12.2 Accessories

Art. - No.	Description
1026-1001	Precision tray guide up to 15kg
1065 1001	Precision tray guide up to 30 kg
1100-2146	Precision tray guide up to 60 kg
1026-1010	Air Connection set with manual gate, valve on/off, G 3/8"
WE9903	Filter - regulator - lubricator G 3/8", small bowl
WE9904	Filter - regulator – lubricator G3/8", large bowl

12.3 Seal Kit

Order No.: 1065 2100 H

Art. - No.	Description	Qty
28067-4	Sealing ring between bodies 27825-2 and 27826-2	1
81943	O-ring for throttle screw	2
81959	Piston packing ring	2
81960	Piston rod packing ring Ø 19.7 mm	1
81961	Piston O-ring	2
81962	Piston rod O-ring	1
81963	Piston guide ring	4
81952	O-ring for air way	2
81953	Valve bushing sealing ring 6 x 2 x 1	1
81954	Valve bushing O-ring 7.65 x 1.78	1
28086-4	Valve block seal, one side phase	2
28078-4	Hex cap nut sealing washer	1
81965	Rotary shaft seal	1
81958	Seal G 1" for air connection	1
81957	Sealing ring G 3/8" For 81944 Throttle Valve	1

**OPERATING INSTRUCTIONS
PS 60**

12.4 Repair Kit

Order No.: 1065 2200 H

Art. - No.	Description	Qty
28065-4	Shock absorber, 19 mm	1
28066-4	Shock absorber, 29 mm	1
28067-4	Sealing ring between bodies 27825-2 and 27826-2	1
81943	O-ring for throttle screw	2
81944	Throttle valve with silencer	1
81959	Piston packing ring	2
81960	Piston rod packing ring	1
81961	Piston O-ring	2
81962	Piston rod O-ring	1
81963	Piston guide ring	4
28089-4	Lock nut damper	2
81952	O-ring for air way	2
81953	Valve bushing sealing ring 6 x 2 x 1	1
81954	Valve bushing O-ring 7.65 x 1.78	1
28086-4	Valve block seal, one-sided phase	2
28078-4	Hex cap nut sealing washer	1
81965	Rotary shaft seal	1
81958	Seal G 1" for air connection	1
81957	3/8" Seal For 81944 Throttle Valve	1