

GP 1800 E
PROFILE GRINDER

TRANSLATION OF THE ORIGINAL OPERATING MANUAL

Revision history

| REVISION | DATE | COMMENTS, AFFECTED SECTIONS/CHAPTERS | EDITED BY |
|----------|------------|--------------------------------------|--------------|
| 00 | 2004-06-24 | Production | Construction |
| 01 | 2010-01-04 | Revision of contents | Construction |
| 02 | 02.2012 | Revision of contents | Construction |
| 03 | 2018-07-03 | Revision of contents | Construction |
| 04 | 2019-04-23 | Chap. 9.4 | Construction |
| 05 | 2020-10-13 | Chap. 9.3 | Construction |
| 06 | 2020-10-13 | Adaption layout | Marketing |
| 07 | 2021-08-04 | Revision of contents | Construction |

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EC Declaration of Conformity

in accordance with EC Machinery Directive 2006/42/EC, Appendix II, No. 1 A.

Manufacturer:

Elektro-Thermit GmbH & Co.KG
A company of the Goldschmidt Group
Chemiestr. 24, 06132 Halle, Germany

hereby declares that the following product

Product name: Profile grinder GP 1800 E
Function: True-to-profile removal of excess weld metal from rails
Serial number: 00540 - 00999
Year: 2020

corresponds to all relevant provisions of EC Machinery Directive 2006/42/EC.

| |
|---|
| The machine additionally complies with the following directives: |
| 2014/30/EU Electromagnetic compatibility, EMC for short |
| Related harmonised standards |
| DIN EN ISO 12100: 2010 Safety of machinery - General principles for design - Risk assessment and risk reduction |
| DIN EN 60204-1:2018 Safety of machinery – Electrical equipment of machines – Part 1: General requirements |

Mr Ingolf Schöniger, Chemiestr. 24, 06132 Halle, Germany, is authorised to submit the technical documents.

Halle, 9 September 2021

A handwritten signature in blue ink, appearing to read "M. Wewel", is written over a horizontal dashed line.

Dr Matthias Wewel
Managing Director

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www.goldschmidt.com

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1. Preliminary remarks

Observation of the User Manual is a prerequisite for trouble-free operation and fulfilment of potential warranty claims. Therefore, read the User Manual (operating instructions) before you work with the device!

The User Manual contains important information for service; therefore it should be kept near the device.



For the operator, the operating manual for the Metabo WE 24-180 MVT angle grinder is binding.

2. Guarantee regulations

The valid guarantee terms are specified in the delivery conditions.

Guarantee claims are voided when

- damage from faulty functioning is due to use other than the intended purpose of the device or improper operation
- repairs or manipulation are carried out by persons who are neither authorised nor trained to do so
- accessories or replacement parts which are the cause of the damage and for which the company
- Elektro-Thermit GmbH & Co. KG has not granted approval are used

These operating instructions are a component of the delivery scope.

We retain the right to modify these operating instructions and the data and illustrations contained herein in the interest of advancing technical progress.

Reprint, translation and distribution in any form, even in excerpts, require the written agreement of the publisher.

These operating instructions are not subject to revision.

3. General

The GP 1800 E rail head grinder is ideal for the precision machining of accurate rail head profiles; in particular for finish-grinding and for work in tunnels if no internal combustion engines can be used. Due to its light weight, the rail head grinder is a popular tool for welding gangs equipped with their own generator, used for hot grinding, while the heavy-duty grinder is only used for the subsequent final grinding of the track surface.

This machine is built in accordance with the safety provisions defined in the VBG 7n6 workplace safety specification.

4. Description of device

The grinder comprises a robust tubular frame mounted on an adjustment fixture with handwheel for feeding the grinding element. A tubular bracket protects the angle grinder mounted on this adjustment fixture. The rail head grinding machine is guided on sets of replaceable rollers mounted on the frame.

A choice of different sets of rollers can be supplied:

- with double rollers and idler rollers for flange rails (Figs. 3 and 4)
- with double rollers and idler rollers for crane rails A100 to A150 (Figs. 5 and 6)
- with double flange for exposed deep-groove rails (Fig. 7)
- with one-sided flange for embedded deep-groove rails (Fig. 8)
- for flat groove rails (Fig. 9)

5. Commissioning

Before commissioning, the mounting on the adjustment fixture must be equipped with a Metabo angle grinder, type WE 24-180 MVT with a 230 V, 50 Hz power connection, provided with a guard for the grinding wheel. Depending on the nature of the grinding process, the grinding machine is provided with the corresponding set of rollers and positioned accordingly on the rail. The energy supply must be provided by connecting the power connection to the electricity grid. The grinding process is carried out by operating the power switch on the angle grinder.

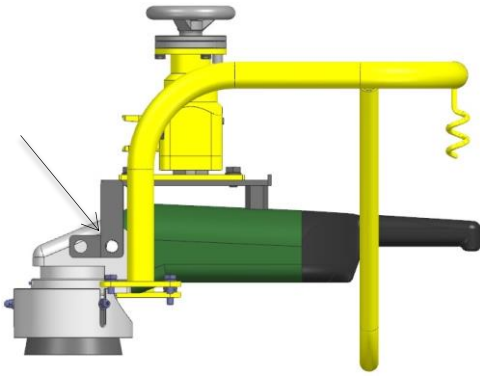


Bild 1: Use rear locating bore for flange and grooved rails

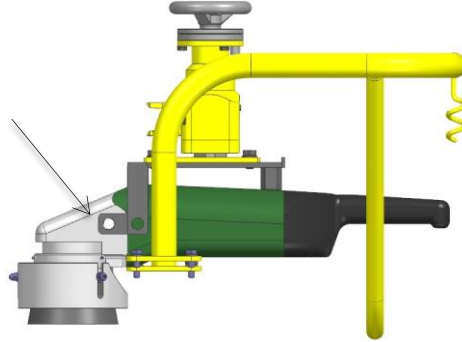


Bild 2: Use front locating bore for crane rails A100, A120, A150

6. Grinding of flange rails (Figs. 3 to 6)

On flange rails the entire rail head profile can be ground accurately. For this, the corresponding sets of rollers are equipped with double rollers and idler rollers. The rollers are deployed in their specified settings by folding down the two brackets, enabling the rail surface and rail edges to be ground without requiring great force to be applied.

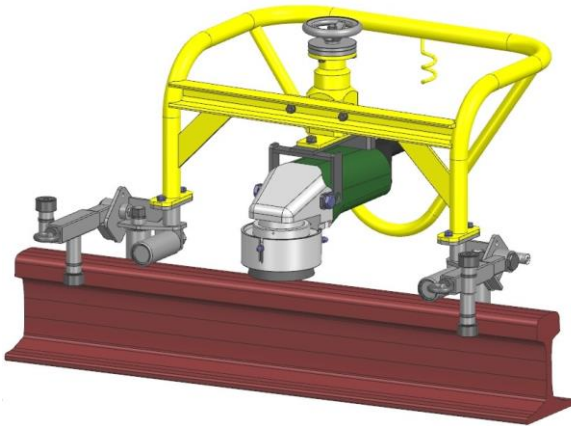


Fig. 3: Grinding the rail surface

Using a set of rollers 360185 left and 360172 right, for angle grinders, use rear bores in support

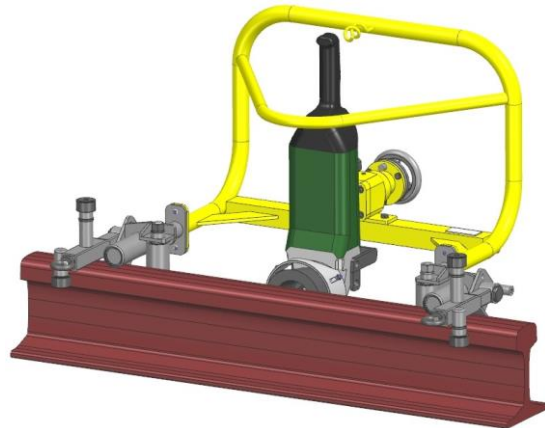


Fig. 4: Grinding edge of rail

Using set of rollers 360185 left and 360172 right

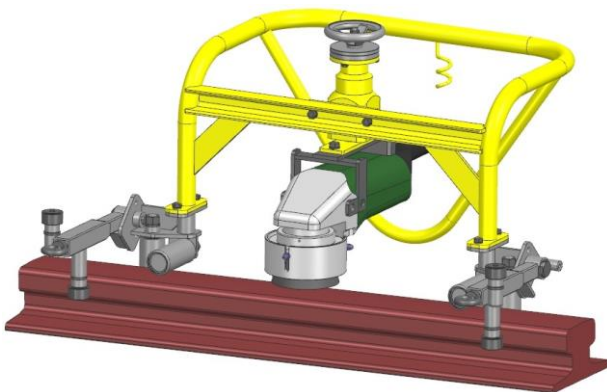


Fig. 5: A100 grinding surface of rail

Using set of rollers 363424 left and 363423 right, for angle grinders, use front bores in the support

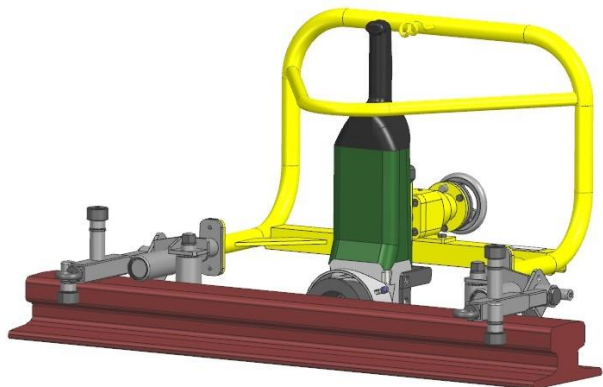


Fig. 6: A100 grinding edge of rail

Using set of rollers 363424 left and 363423 right

7. Grinding of deep-groove and flat-groove rails (Figs. 7 to 9)

On exposed deep-groove rails, the surface of the rail and the top edge of the guide rail can be ground. However, on embedded deep-groove rails and flat-groove rails, only the surface of the rail can be ground.

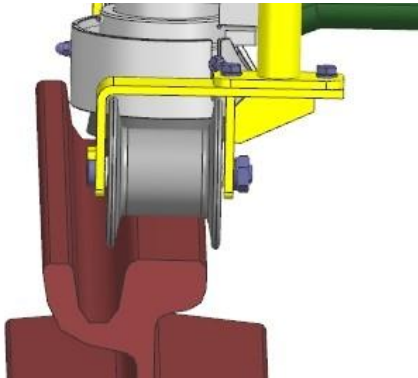


Fig. 7: Roller with double flange for exposed deep-groove rails

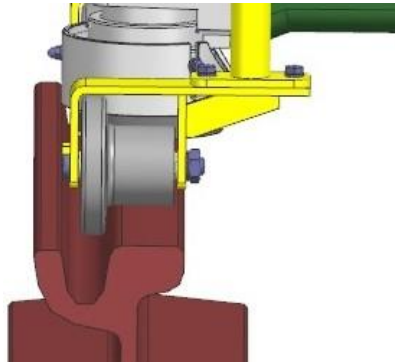


Fig. 8: Idler roller with one-sided flange for embedded deep-groove rails

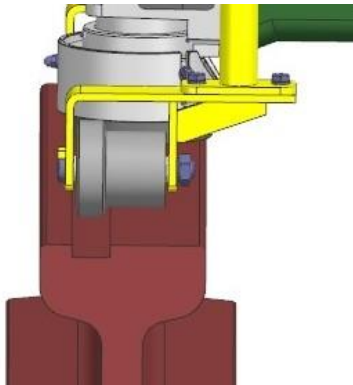


Fig. 9: Roller for flat-groove rails

8. Grinder

Only tapered cup washers approved by the German Grinding Wheel Committee [Deutscher Schleifscheibenausschuss (DSA)] with dimensions of 110/90 mm x 50 mm x 22.2 mm can be used, with a permitted circumferential speed of 50 m/s.

Before each installation, every grinder must be subjected to a visual and an acoustic inspection for cracks, spalling, imbalance or other signs of damage. Grinders found to have any of these problems must not be used.

Once clamped into position, new grinders must be test run for 5 minutes without load.

Never remove the guard fixture on the grinder while it is in operation.

In addition, always wear goggles and ear defenders when using a grinder.

9. Technical data

| CATEGORY | DATA | |
|-----------------------------|---------------------------------|-------------------------------------|
| Dimensions | Total length | 815 mm |
| | Total width | 530 mm |
| | Total height | 500 mm |
| Weights | Frame with adjustment fixture | 9 kg |
| | Set of rollers | 6 kg |
| | Angle grinder | 6 kg |
| | Total weight | 21 kg |
| Angle Grinder | Fabrication | Metabo Type WE 24-180 MVT |
| | Connected rating | 230 V, 50/60 Hz, 11.6 A |
| | Speed | n = 8500 min ⁻¹ |
| | Power | Consumption 2.6 kW Output 1.6 kW |
| Grinder | Version | Tapered cup washer |
| | Dimensions | 110/90 mm x 55 mm x 22.2 mm |
| | Permitted circumferential speed | v = 50 m/s |
| | DAS approved | |
| Sound Pressure Level | Sound pressure during grinding | 94 dBA |

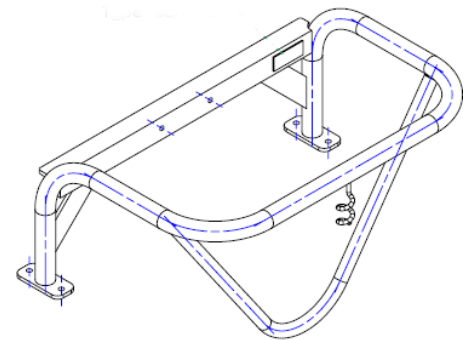
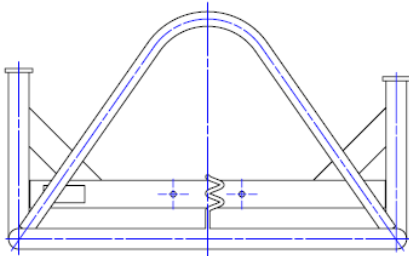
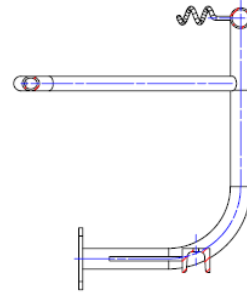
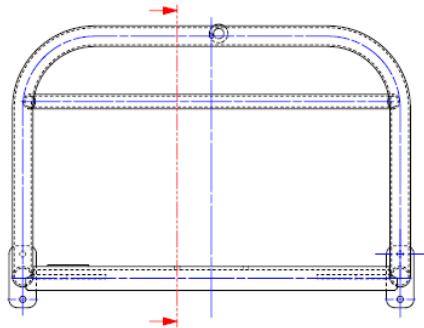
10. Technical documentation/list of spare parts

| LIST OF SPARE PARTS PROFILE GRINDER GP 1800 E, SKETCH NO. 202-000 | | | | |
|---|--|------|-----------|------------|
| POS. | DESCRIPTION | PART | REF. -NO. | SKETCH NO. |
| 1 | Frame | 1 | 363422 | 202-100 |
| 2 | Adjustment fixture | 1 | 350472 | 202-200 |
| 3 | Set of rollers, right, for flange rails | 1 | 360172 | 202-301 |
| 4 | Set of rollers, left, for flange rails | 1 | 360185 | 202-302 |
| 5 | Set of rollers, right, A100 for crane rails | 1 | 363423 | 202-311 |
| 6 | Set of rollers, left, A100 for crane rails | 1 | 363424 | 202-312 |
| 7 | Set of rollers with double flange for exposed deep-groove rail | 2 | 350477 | 202-400 |
| 8 | Set of rollers with one-sided flange for embedded deep-groove rail | 2 | 350478 | 202-500 |
| 9 | Set of rollers with one-sided flange for flat-groove rails | 2 | 350479 | 202-600 |
| 10 | Angle grinder and accessories | 1 | 350481 | - |



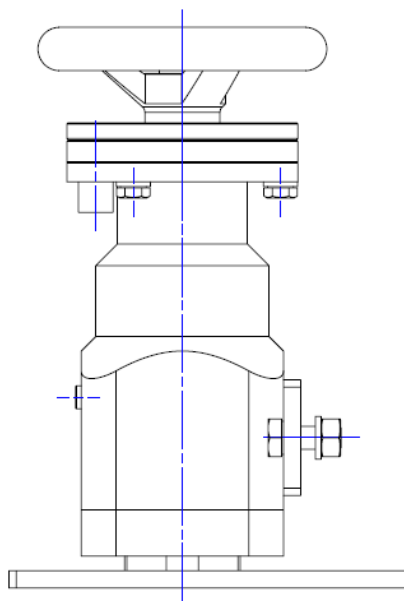
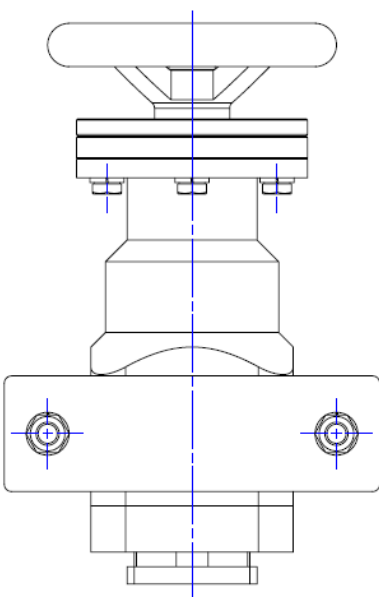
10.1 Frame

| LIST OF SPARE PARTS PROFILE GRINDER GP 1800 E, SKETCH NO. 202-000 | | | | |
|---|-------------|------|-----------|------------|
| POS. | DESCRIPTION | PART | REF. -NO. | SKETCH NO. |
| 1 | Frame | 1 | 363422 | 202-100 |



10.2 Adjustment fixture

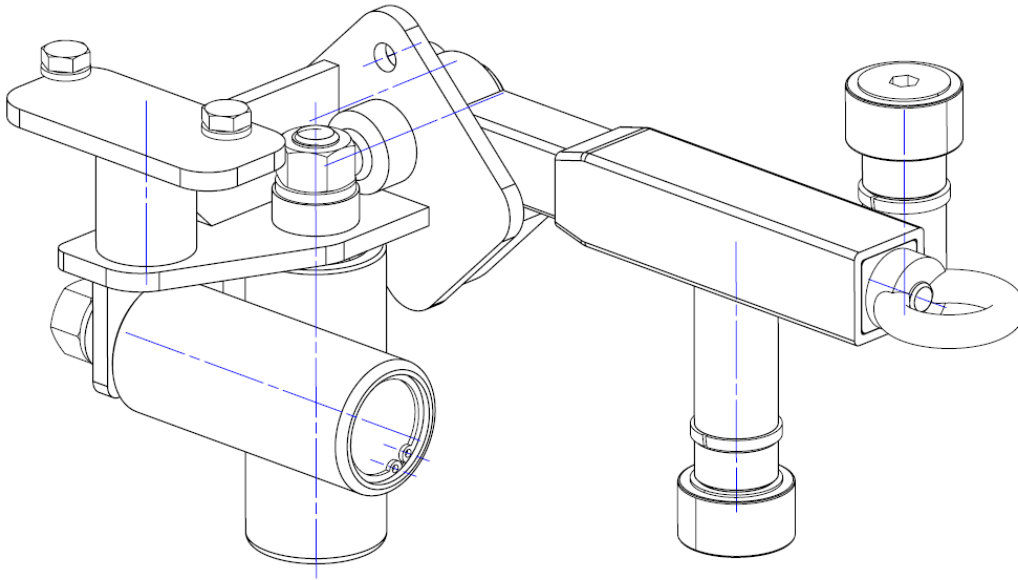
| LIST OF SPARE PARTS PROFILE GRINDER GP 1800 E, SKETCH NO. 202-000 | | | | |
|---|--------------------|------|-----------|------------|
| POS. | DESCRIPTION | PART | REF. -NO. | SKETCH NO. |
| 2 | Adjustment fixture | 1 | 350472 | 202-200 |



10.3 Set of rollers

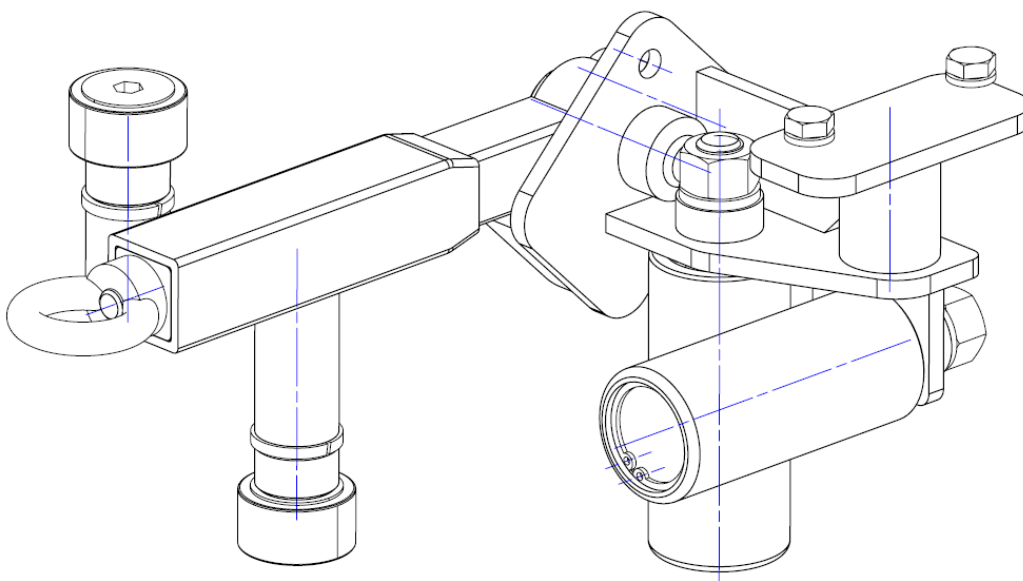
10.3.1 Set of rollers, right

| LIST OF SPARE PARTS PROFILE GRINDER GP 1800 E, SKETCH NO. 202-000 | | | | |
|---|---|------|-----------|------------|
| POS. | DESCRIPTION | PART | REF. -NO. | SKETCH NO. |
| 3 | Set of rollers, right, for flange rails | 1 | 360172 | 202-301 |



10.3.2 Set of rollers, left

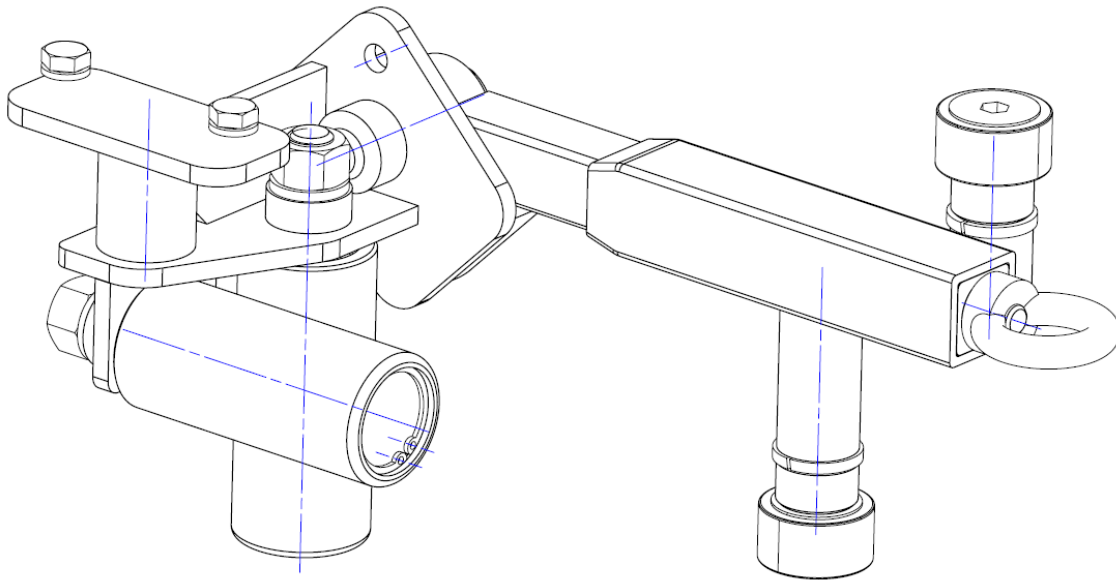
| LIST OF SPARE PARTS PROFILE GRINDER GP 1800 E, SKETCH NO. 202-000 | | | | |
|---|----------------------|------|-----------|------------|
| POS. | DESCRIPTION | PART | REF. -NO. | SKETCH NO. |
| 4 | Set of rollers, left | 1 | 360185 | 202-302 |



10.4 Set of rollers, A100

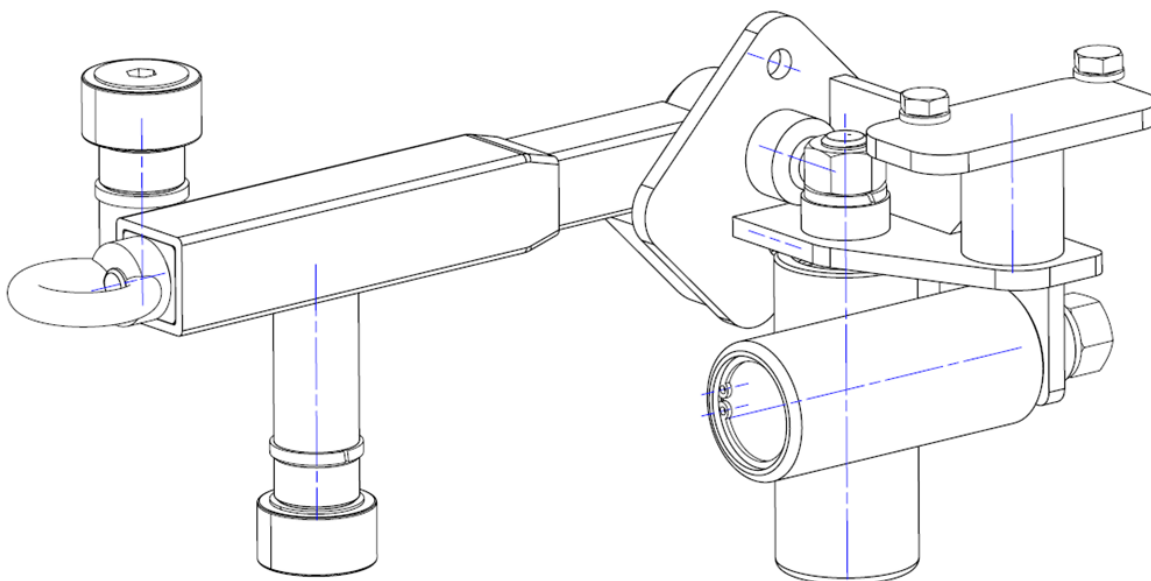
10.4.1 Set of rollers, right, A100

| LIST OF SPARE PARTS PROFILE GRINDER GP 1800 E, SKETCH NO. 202-000 | | | | |
|---|-----------------------------|------|-----------|------------|
| POS. | DESCRIPTION | PART | REF. -NO. | SKETCH NO. |
| 5 | Set of rollers, right, A100 | 1 | 363423 | 202-311 |



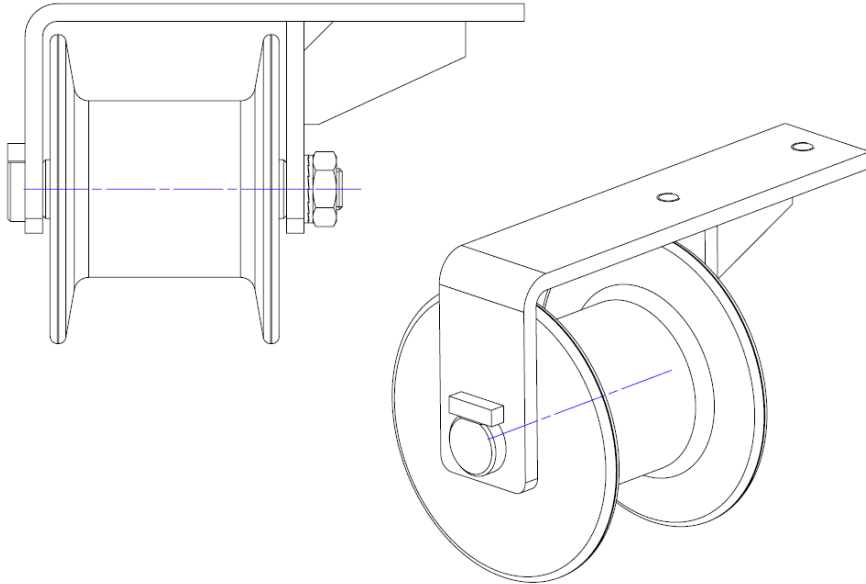
10.4.2 Set of rollers, left, A100

| LIST OF SPARE PARTS PROFILE GRINDER GP 1800 E, SKETCH NO. 202-000 | | | | |
|---|----------------------------|------|-----------|------------|
| POS. | DESCRIPTION | PART | REF. -NO. | SKETCH NO. |
| 6 | Set of rollers, left, A100 | 1 | 363424 | 202-312 |



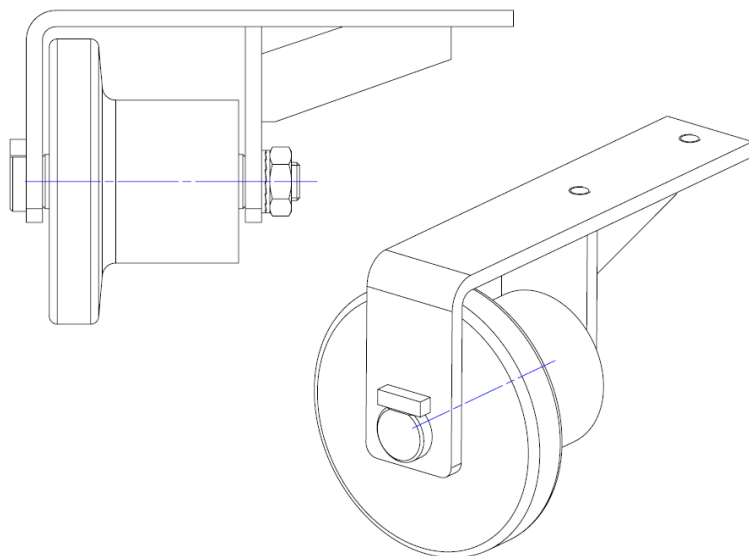
10.5 Set of rollers with double flange

| LIST OF SPARE PARTS PROFILE GRINDER GP 1800 E, SKETCH NO. 202-000 | | | | |
|---|-----------------------------------|------|-----------|------------|
| POS. | DESCRIPTION | PART | REF. -NO. | SKETCH NO. |
| 7 | Set of rollers with double flange | 2 | 350477 | 202-400 |



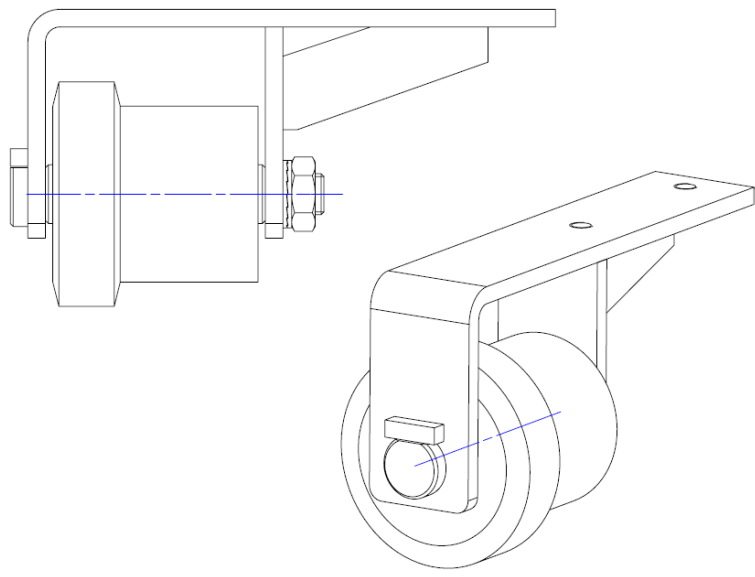
10.5.1 Set of rollers with one-sided flange

| LIST OF SPARE PARTS PROFILE GRINDER GP 1800 E, SKETCH NO. 202-000 | | | | |
|---|--------------------------------------|------|-----------|------------|
| POS. | DESCRIPTION | PART | REF. -NO. | SKETCH NO. |
| 8 | Set of rollers with one-sided flange | 2 | 350478 | 202-500 |



10.5.2 Set of rollers with one-sided flange, flat

| LIST OF SPARE PARTS PROFILE GRINDER GP 1800 E, SKETCH NO. 202-000 | | | | |
|---|--|------|-----------|------------|
| POS. | DESCRIPTION | PART | REF. -NO. | SKETCH NO. |
| 9 | Set of rollers with one-sided flange, flat | 2 | 350479 | 202-600 |



10.6 Angle grinder and accessories

| LIST OF SPARE PARTS PROFILE GRINDER GP 1800 E, SKETCH NO. 202-000 | | | | |
|---|--|------|-----------|------------|
| POS. | DESCRIPTION | PART | REF. -NO. | SKETCH NO. |
| 1 | Angle grinder type: WE 24-180 MVT, 230 V, 50 Hz, 11.6 A, 2400 W, d=180 mm, n=8500 min/-1 | 1 | 350481 | 202-801 |
| 2 | Guard fixture | 1 | 350488 | 202-802 |
| 3 | Quick-release nut GWS 23 | 1 | - | 202-813 |
| 4 | Tapered cup washer | 1 | 350101 | 557-609 |
| 5 | Angle grinder bracket including hose connector, rubber materials and mounting materials | 2 | 350182 | 202-804 |

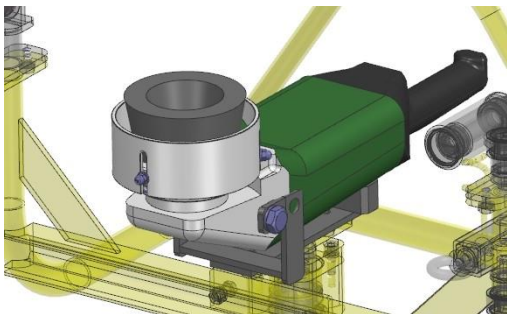
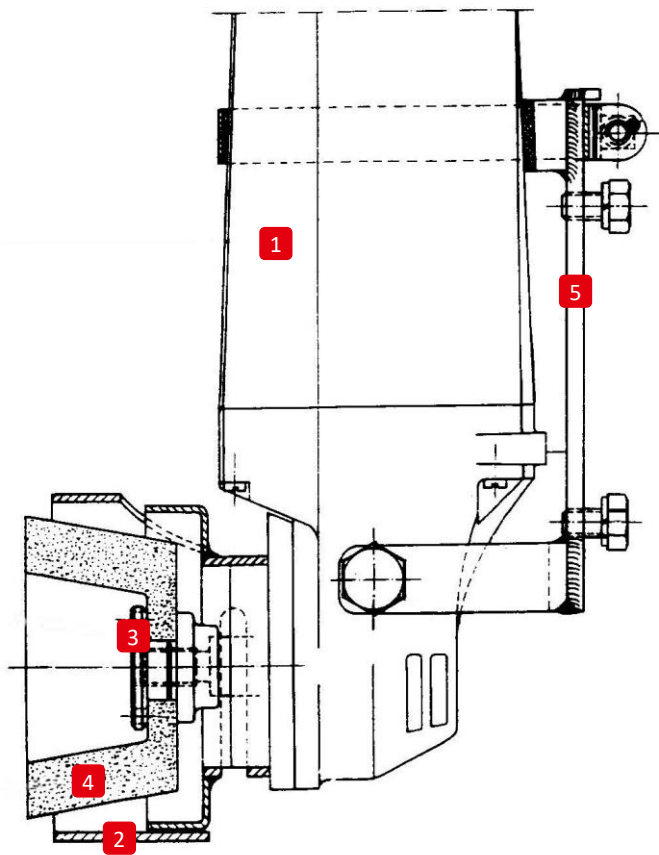


Fig. 10: Mounting kit for the universal angle grinder and angle grinder bracket

11. Note to ordering replacement parts

When ordering replacement parts, please provide the following information:

1. Count
2. Designation
3. Ref. – number
4. Device – number

The device number is located on the type plate on the frame

Example of an order:

Ref. – number

Device – number

Subject to change without notice!