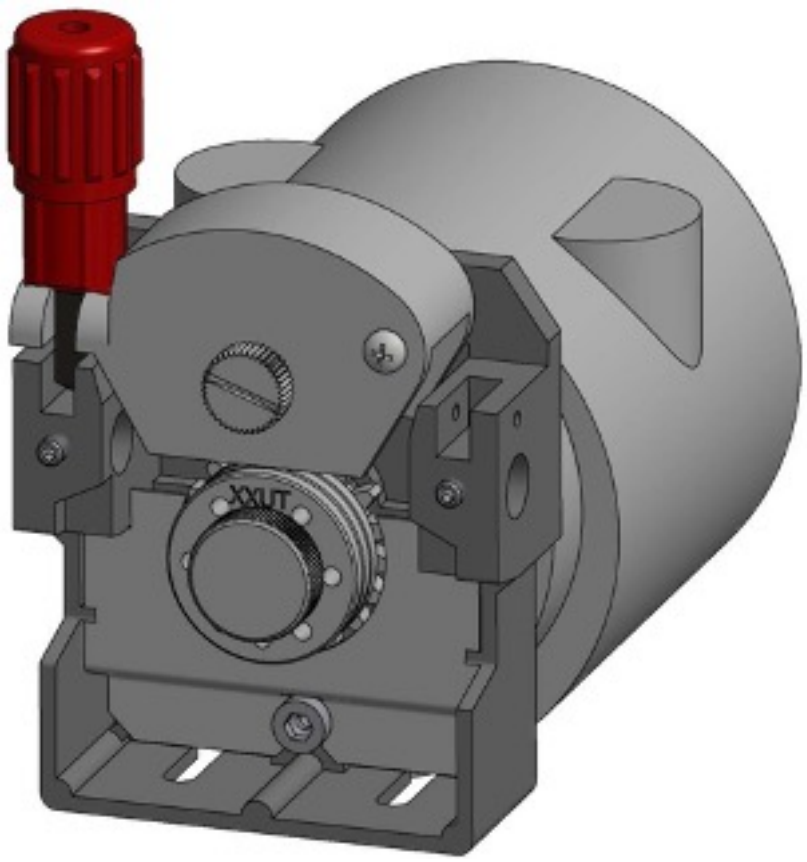
Pneumatic feed assist DLDA1



Manual
Spare part list

1. About

1.1.About this document

1.1.1.Intended purpose

The purpose of this document is to familiarize you with this wire drive mechanism. It will outline proper installation methods for safe and adequate commissioning of this device. Follow the instructions to avoid safety hazards and to increase the reliability and service life of the equipment.

1.1.2.Intended Audience

This document is intended for trained and skilled personnel. It contains information on how to fulfill the necessary work duties. Because the device is a component intended for installation within another device; any and all relevant information contained within this document must be also communicated within the original instructions of the final product.

1.1.3.Symbols

	General Warning Indicates a potential hazardous situation. If not avoided it may result in personal injury or threat to health.
	Warning Electricity Indicates a potential hazard due to electricity. If not avoided it may result in personal injury or threat to health.
	Warning Hot Surface Indicates a potential hazard due to heat. If not avoided it may result in personal injury or threat to health.
	Mandatory Action Indicates an activity you must perform before continuing. It gives information on a particular item you need to observe.
	Prohibited Action Indicates an activity you must not perform. It gives information on a particular item you need to observe.
	Best Practice Indicates an advice or recommendation on the easiest and best way to further proceed.

1.2.About this Device

The Pneumatic Air Assist is a compact, 2-Roll wire drive mechanism equipped with a compressed air motor for assistance in the transportation of wire electrodes used in various arc welding applications.

The device is intended to be used as a slave in conjunction with another master wire feed mechanism in what is referred to as a push-pull configuration. The compressed air motor allows the device to produce a constant torque for assisting the master wire feed mechanism. The device is designed to be installed either directly on or near the welding filler wire supply.

1.3.About the Safety Precautions

These instructions are intended for qualified technical personnel. Before commencing with any activities you must first read and understand this document. You must also follow the instructions described within. Do not proceed with any work unless you possess the skills stated for the intended audience. Refer to chapter 1.1.3 to understand the subsequently used symbols.

Requirements

•Make sure that all associated components are installed according to their instructions and local regulations.

•Be aware that you are not entitled to perform any modifications on components supplied by MIGAL.CO GmbH.

2. Specifications

2.1.Technical data

This wire drive mechanism is offered with ø37mm Twin driven feed rolls. Non-standard motor options which are not covered in this document may or may not be compatible with this device.

General Information	Housing Material	Aluminium / PA6 GF30
	Motor type	Pneumatic with compressed air
	Ingress Protection Class	IP 65
Environmental conditions	Ambient temperature range	-10° - +40° Celsius
	Humidity range	5%-90%

Specifications DLDA-1		
Mechanical rating	Nominal air pressure	1,4 Bar
	Maximum air pressure	5,6 Bar
	Nominal pulling force	40 N
	Maximum pulling force	150 N
	Wire speed	1-350 m/min
	Wire sizes	Ø 0,6-4,0 mm
	Weight	4,5 kg
	Compressed air connections	1/4“ NPT
	Air consumption (5,6 Bar)	29-99 m3/h

- Maximum Pulling Force is repeatable only for short intermittent periods.
- Depending on the hardware and motor-control techniques used, the range of speed may be different than shown in Table 2-3.
- Weight is specified as wire drive mechanism with feed rolls, without torch connection.

3. Setup

3.1.Installing the device

Touching live wires causes death or serious injury.

Make sure that the welding power supply cannot be engaged while work is in process.

Rotating machinery can cause severe injury.

Make sure that the motor air supply cannot be engaged while work is in process.

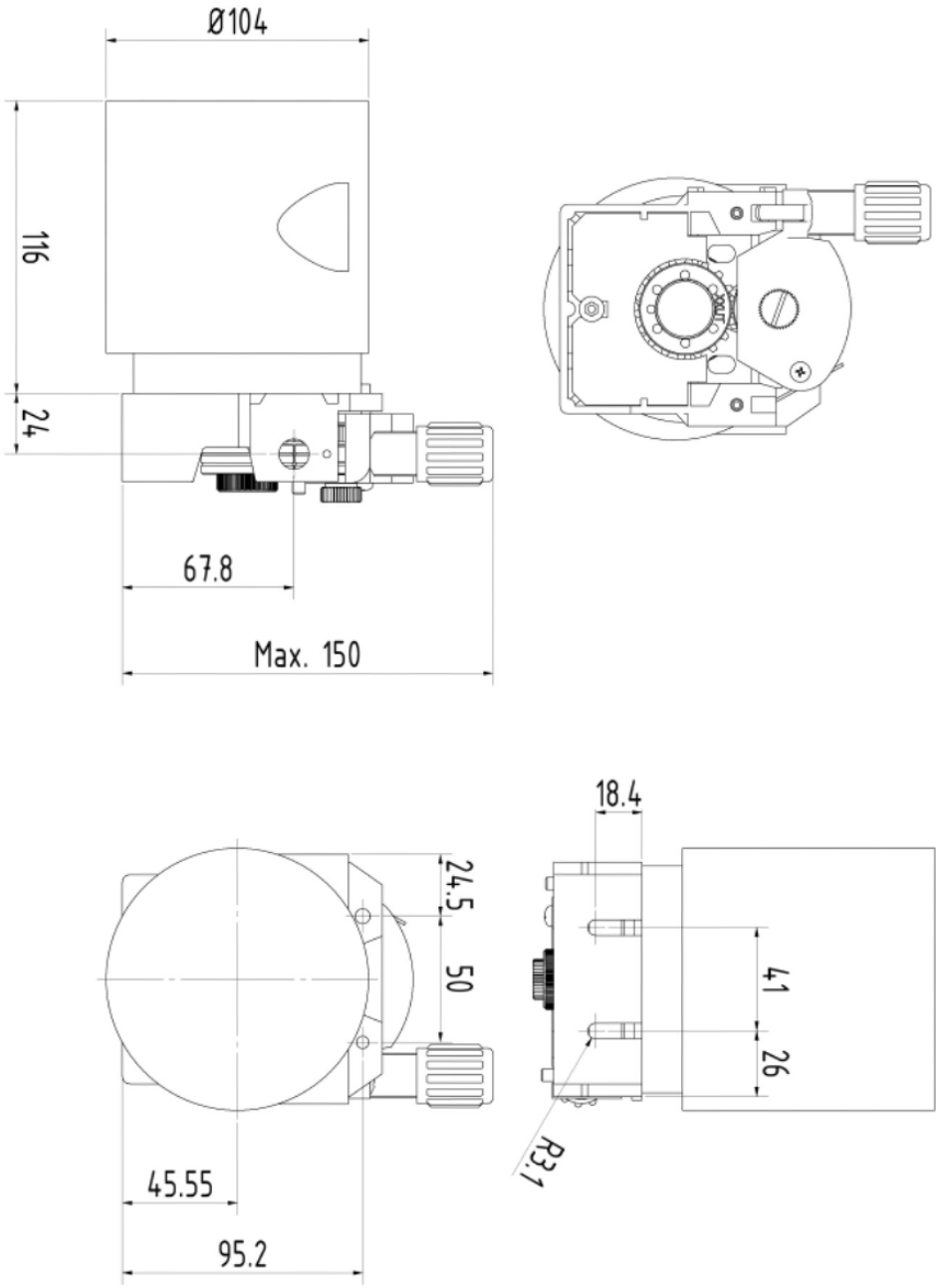
Requirements

This wire drive mechanism is a component intended to be incorporated into or assembled with other machinery.

The final assembly of which this device is a component should be made in accordance with directive 2006/42/EC and standard IEC 60974-1 and any presiding local regulations.

This device is mountable from the bottom surface or either side surfaces. During the welding process the device may conduct the welding arc tension. The wire drive mechanism should be isolated either within an enclosure or within a restricted area. The motor’s air connections should be connected according to the motor specifications. Air supply filter, oiler and regulator are not supplied with this device. Normal wear of the feed rolls and other mechanical parts may cause metallic dust to accumulate. Any sensitive electrical components should be isolated from these mechanical parts. The unit should be

installed in such a manner that the supply of welding wire is delivered in line with the inlet and outlet points of the unit. In order to maximize the lifetime of the wire drive motor, the motor controller should incorporate a device filtering and oiling the supply air.



Technical drawing DLDA-1

4. Usage

4.1.Installing feed rolls

To begin using this device the appropriate feed rolls must be first installed. The rolls can be identified by the unique marking on the roll faces.

Rotating machinery can cause severe injury.

- Make sure that the device cannot be engaged while work is in process.
- Make sure that the welding power supply cannot be engaged while work is in process.
- Remove any gloves before proceeding.
- Do not reactivate the device unless the cover plate and pressure arms are securely closed.

The pressure arm must be released to give access to the feed rolls. Remove the knurled fixation screws and assemble the feed rolls onto the drive gears. Make sure that the identification symbol corresponding to the intended welding wire is facing forward. Secure the rolls with the knurled fixation screws. Close and secure the pressure arms with the pressure adjustment unit.

4.2.Threading the welding wire

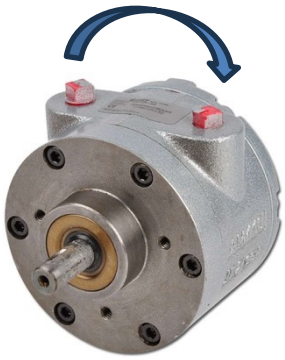
Rotating machinery can cause severe injury.

- Make sure that the device cannot be engaged while work is in process.
- Make sure that the welding power supply cannot be engaged while work is in process.
- Make sure to use gloves before proceeding.
- Use protective eyewear against possibly sharp wire ends.
- Do not reactivate the device unless the cover plate and pressure arm are securely closed.
- Installation of the Pneumatic Feed Assist DLDA-1 should be as close to the drum as possible.
- Make sure the correct drive rolls for your wire diameter and material are installed.
- Initial setting for feed roll pressure is 1-2.
- Mount the filter, regulator, lubricator (FRL) so that it is in the vertical position. Fill the reservoir with air tool lubricating oil Klueber Airpress 32 or similar. Set lubricator so it provides 1 drop of oil for every two minutes of operation at 1.4 bar.
- Ensure that the ball air valve is closed and connect the air supply to the inlet of FRL.
- Feed the wire through the feed assist and close the bail. Ensure that the wire is between the grooves in the drive rolls.
- Confirm the air pressure is set at 0 Bar on the regulator gauge.
- Open the ball valve.
- With the ball valve open, slowly increase the air pressure by turning the knob in a clockwise direction. The amount of air pressure required to push the wire will vary depending on the following: wire diameter, wire source, conduit type, conduit length and the straightness of the conduit.
- As the air pressure is increased, the motor will start to push the wire. DO NOT turn the pressure up more than what is needed to push the wire through the conduit alone. The feed assist motor can provide wire speeds in excess of 30 m/min.

- To fine tune the Feed Assist, loosen the tension knob on the bail until the wire starts to slip between the drive rolls, then tighten it back 1/4 to 1/2 turn. If the feed assist is set up correctly, the motor should stall when grasping the wire and resume pushing wire when pressure is released. Do not overtighten drive rolls.

NOTE: When the air pressure is set too high, the wire may “bird’s nest” or push past the drive rolls when the wire feeder is not feeding wire. If the pressure is set too low, it creates drag on the wire feeder causing the drive rolls to slip.

NOTE: The wire feed direction can be changed by changing air- inlet and outlet.



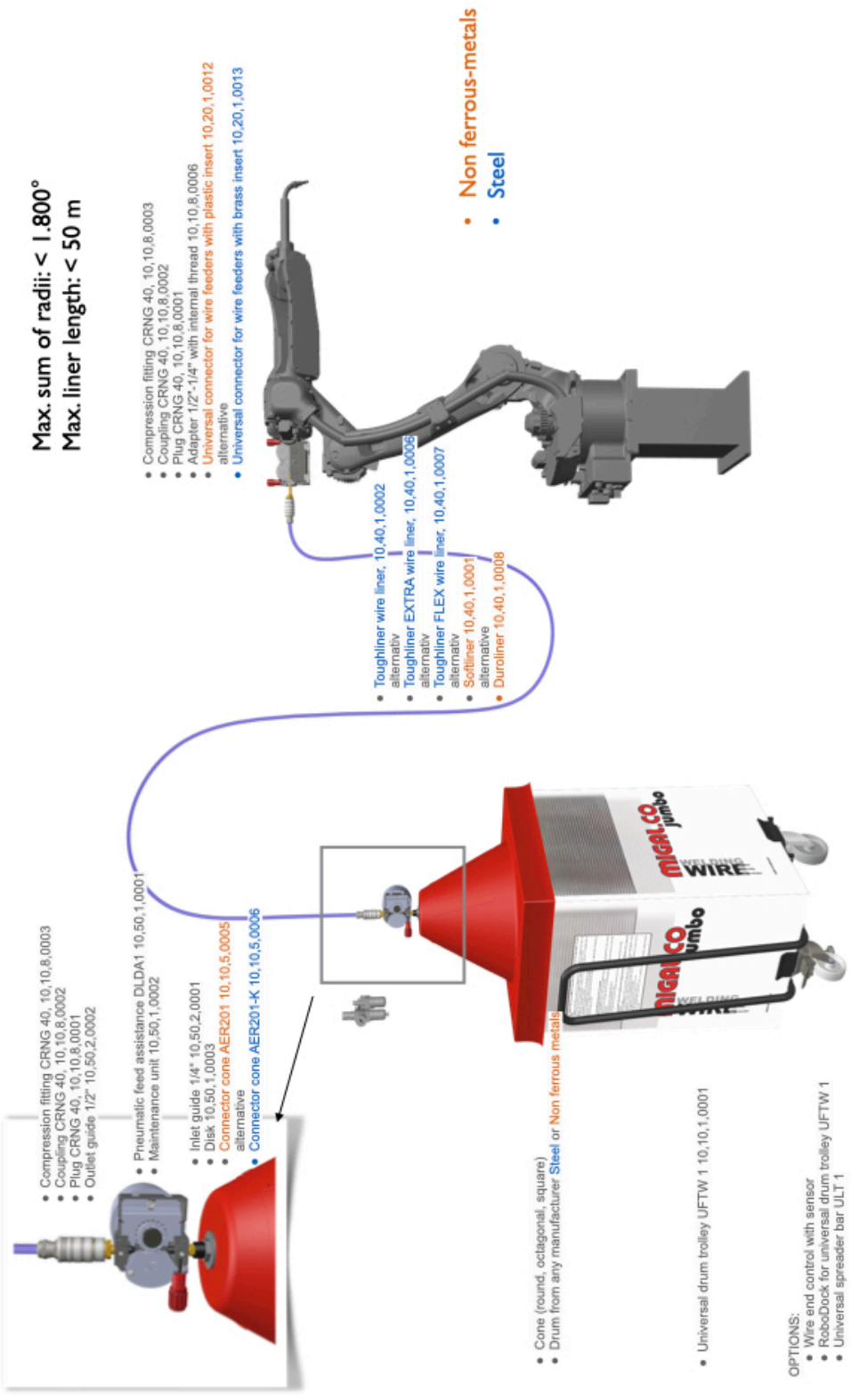
5. Maintenance

The device should be properly maintained to ensure reliable operation. As a guideline the maintenance schedule in the table should be followed. The intervals assume 60% duty cycle. If actual conditions are different the intervals should be adjusted accordingly. Repairs on this device should be carried out by a qualified technician.

Touching live wires causes death or serious injury.

Make sure that the power source cannot be engaged while work is in process.

Item	Interval	Action
Rolls	1.000 service hours	Inspect, clean or replace
Wire guides	1.000 service hours	Inspect, replace
Motor	10.000 service hours	Inspect, service/replace
Gears/Bearings	15.000 service hours	Replace



Typical setup of wire feed system with the DLDA-1

6. Standards

Declaration of Incorporation of partly completed machinery

The manufacturer / distributer:

MIGAL.CO GmbH, Wattstraße 2, 94405 Landau/Isar, Germany hereby declares that products:

2-roll wire drive unit with type designation DLDA-1 pneumatic feed assist

fulfil the following essential requirements of 2006/42/EC Annex I:

1.1.2, 1.1.3, 1.1.5, 1.3.2, 1.3.4, 1.3.7, 1.3.8, 1.4.1

The following harmonized standards have been applied:

EN 60974-5 Arc welding equipment- Part 5 Wire feeders

The following additional European Union Directives have been applied: 2011/65/EU
Restriction of the use of certain hazardous substances

Technical documentation for the product(s) has been compiled by Robert Lahnsteiner; MIGAL.CO GmbH. Upon reasoned request, relevant information may be transmitted to national authorities via email or postal service.

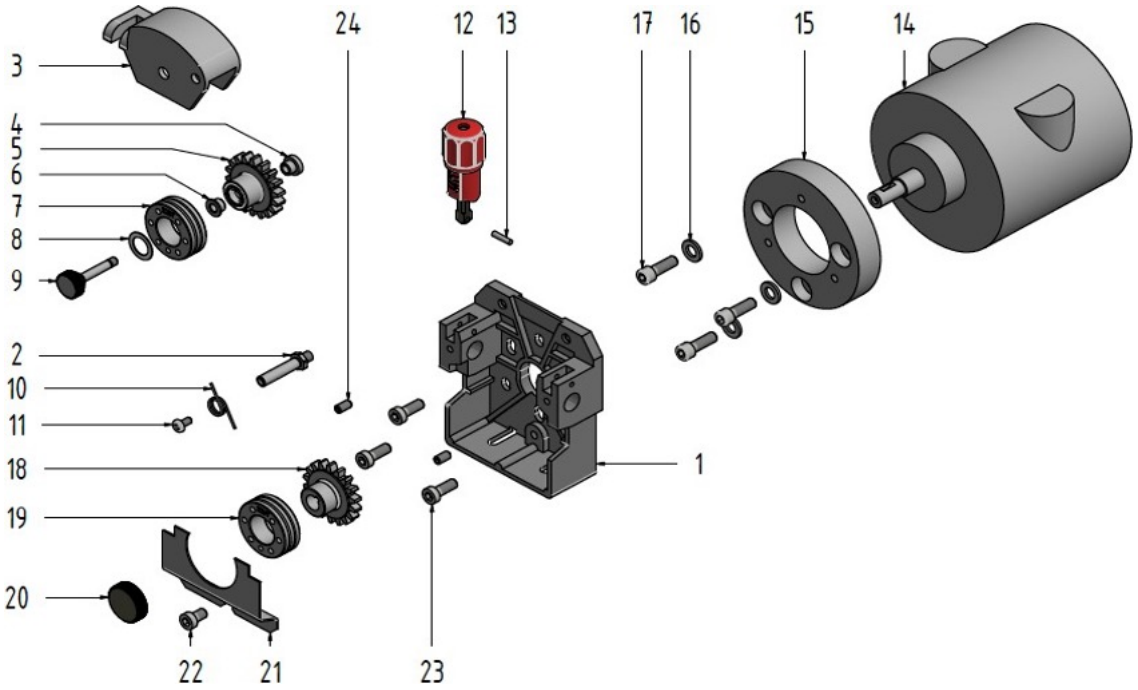
Partly completed machinery must not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of, where applicable, the machinery directive.

Issued:

01.04.2023, Landau/Isar

Robert Lahnsteiner

7. Sparepartlist



Pos	Part number	Designation
1	10,50,5,0001	Feed plate
2	10,50,5,0002	Swing-arm axle
3	10,50,5,0003	Pressure arm
4	10,50,5,0007	Distance spacer, POM, 3mm, ø5mm ID
5*	10,50,5,0005	Pressure-roll gear
6	10,50,5,0006	Distance spacer, POM, 1mm, ø5mm ID
7**	10,50,5,0022	Pressure roll Ø 37 mm without groove, H 12 mm
8	10,50,5,0004	Distance spacer
9	10,50,5,0008	Pressure-roll axle
10	10,50,5,0009	Torsion spring
11	10,50,5,0010	Pan head screw M4x8mm
12	10,50,5,0011	Pressure adjustment unit
13	10,50,5,0012	Tapered pin
15	10,50,5,0013	Distance spacer
16	10,50,5,0014	Washer M6
17	10,50,5,0015	Socket head cap screw, 1/4 x 3/4 UNC, BN 13
18	10,50,5,0016	Drive gear
19	10,50,3,0008	Drive roll 0,8/1,0 mm Fe
19	10,50,3,0010	Drive roll 1,0/1,2 mm Fe
19	10,50,3,0012	Drive roll 1,2/1,6 mm Fe
19**	10,50,4,0008	Drive roll 0,8/1,0 mm Al, Cu
19**	10,50,4,0010	Drive roll 1,0/1,2 mm Al, Cu
19**	10,50,4,0012	Drive roll 1,2/1,6 mm Al, Cu
20	10,50,5,0017	Fixation screw
21	10,50,5,0018	Cover plate
22	10,50,5,0019	Socket head cap screw M6x8mm
23	10,50,5,0020	Socket head cap screw M6x18mm

Pos	Part number	Designation
24	10,50,5,0021	Set screw M5x10 mm
4, 5, 6, 8, 9	10,50,5,0023	Set pressure roll

* Instead of Pos 5 always use Pressure roll gear set 10,50,5,0023

** For steel wires use pressure roll pos 7, for Al/Cu use pos. 19 for pressure- and drive