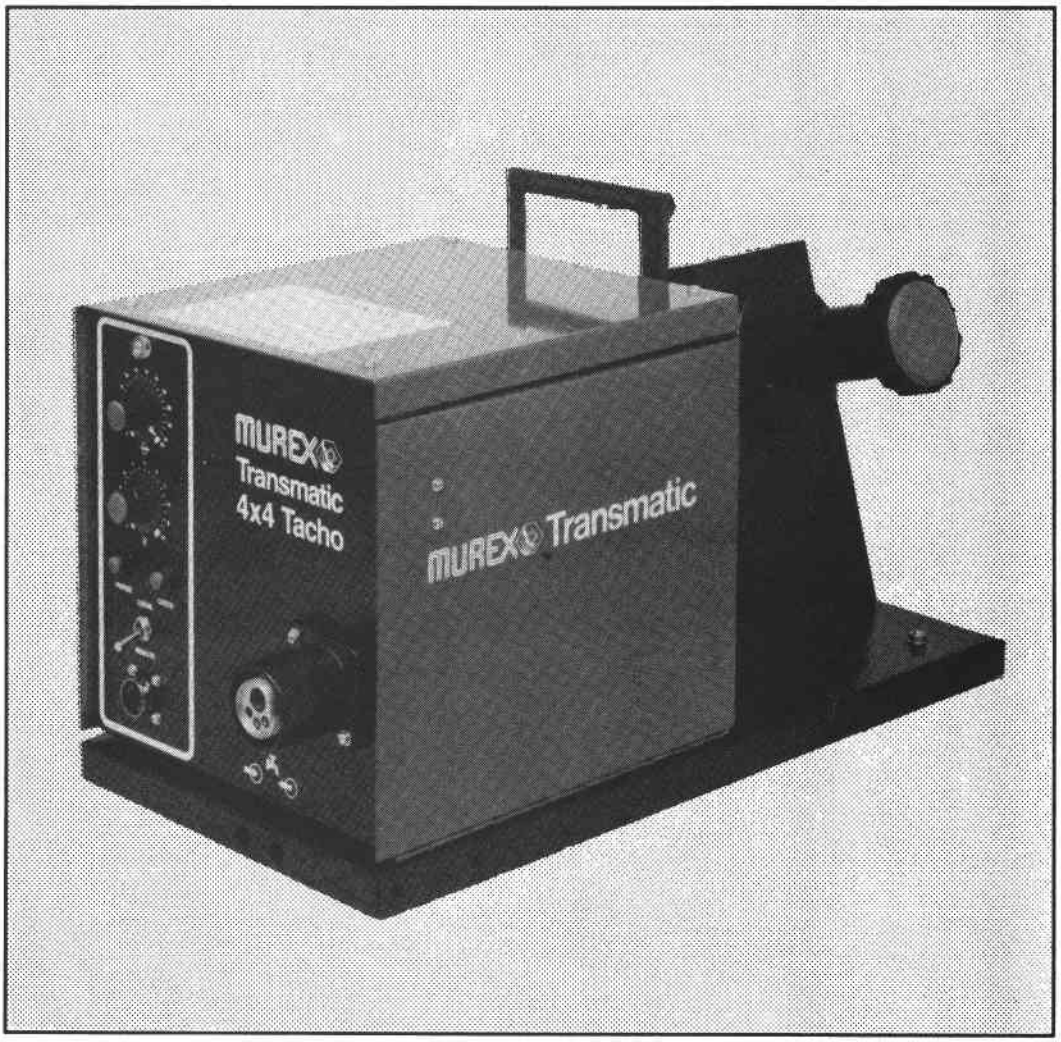
Operating Manual

Transmatic 4 x 4 Tacho



Please ensure that this Instruction Manual is made available to the user of the equipment.

£2.50

⚠ WARNING ⚠

ARC WELDING/CUTTING CAN BE INJURIOUS TO YOURSELF AND OTHERS. TAKE PRECAUTIONS WHEN WELDING. ASK FOR YOUR EMPLOYER'S SAFETY PRACTICES WHICH SHOULD BE BASED ON MANUFACTURERS' HAZARD DATA.

ELECTRIC SHOCK - Can Kill

- Install and earth the welding unit in accordance with applicable standards.
- Do not touch live electrical parts or electrodes with bare skin, wet gloves, or wet clothing.
- Insulate yourself from earth and work.
- Ensure your working position is secure.

FUMES AND GASES - Can be Dangerous to Health

- Keep your head out of the fumes.
- Use ventilation, extraction at the arc, or both, to keep fumes and gases from your breathing zone and general area.

ARC RAYS - Can Injure Eyes and Burn Skin

- Protect your eyes and body. Use correct welding screen and filter lens and wear protective clothing.
- Protect bystanders with suitable screens or curtains.

READ AND UNDERSTAND THIS INSTRUCTION MANUAL BEFORE INSTALLING OR OPERATING AND SEE WMA PUBLICATION 237 'The arc welder at work' AVAILABLE FROM THE MANUFACTURER.

PROTECT YOURSELF AND OTHERS

⚠ WARNING ⚠

- Do not leave tools, contact tips, spare feed rolls etc. inside wire feed units.
- Ensure the wire reel is correctly installed and that the retaining nut/device is correctly fitted.

WARNING

This welding equipment has been designed, manufactured and tested to the highest quality standards to ensure long and trouble free life. However, regular maintenance is an essential part of keeping the machine operating in a reliable and safe manner and your attention is drawn to any maintenance instructions that are contained in this manual.
In general, all welding equipment should be thoroughly inspected, tested and serviced at least annually. More frequent checking will be required when the equipment is heavily used.
Wear and tear, particularly in electro-mechanical and moving components, are gradual processes. Caught in time, repair costs are small and the benefits in performance, reliability and safety are significant. Left alone, they can put the equipment, and you, at risk.
Have this equipment regularly inspected and maintained by an approved service centre.

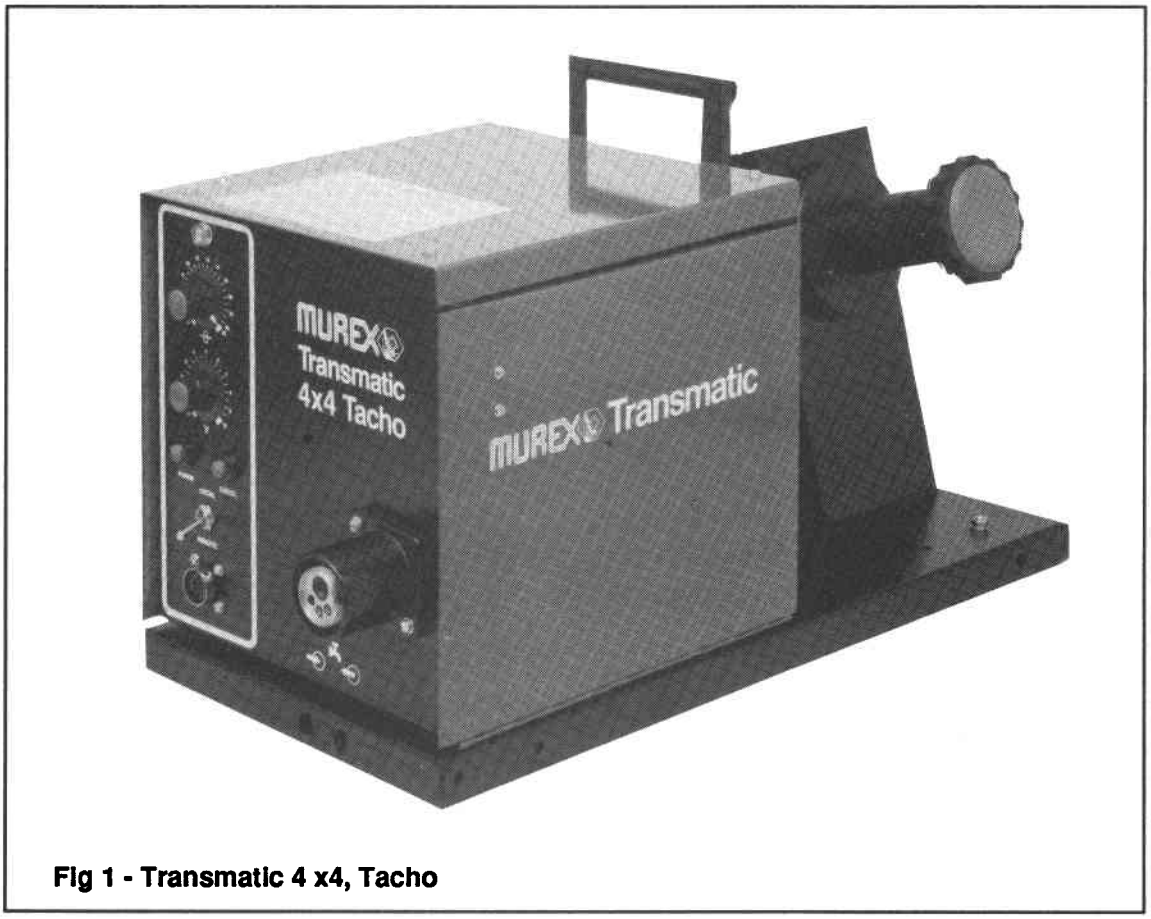


Fig 1 - Transmatic 4 x4, Tacho

GENERAL

The Transmatic 4 x 4 Tacho feed unit is designed for use in MIG/MAG welding installations where accuracy and repeatability of wire feed speed are required.

The unit will feed hard, soft or tubular (cored) wires. Details of the wire sizes handled are given in the specification. (See Technical Notes)

A quick - fit central adaptor (Euro Connector) allows the full range of air and water-cooled torches to be fitted quickly and with minimum preparation. When using a water cooled torch the water adaptor kit must be fitted.

Wire is fed from the feeder by four driven feed rolls. The feed rolls are driven by a d.c. motor using a worm drive and spur gears.

Also incorporated in the feed motor is a Tacho which ensures accurate and constant wire feed speed irrespective of the load applied to the feed system.

When changing wire sizes the feed rolls, outlet guide tube liner, inlet guide and intermediate guide may have to be changed. (See Parts List).

Each feed roll has two alternative groves and is stamped with the wire size on the outside edge (facing the Operator).

The pressure roll tensions can be adjusted to counteract wire slip.

Standard facilities include variable Wire Feed Speed, Gas Purge, Torch Switch Latching, Creep Start and Voltage Adjustment.

Note: *The voltage adjustment will only operate when the unit is connected to a suitable electronically controlled welding power source.*

The unit is fitted with a plastic hub designed to accept a standard 15Kg reel of wire. A 30Kg reel holder and mounting plate, wire basked or reel cover kit can be fitted. (See Optional Extras).

Over-run adjustment facilities are provided in the hub.

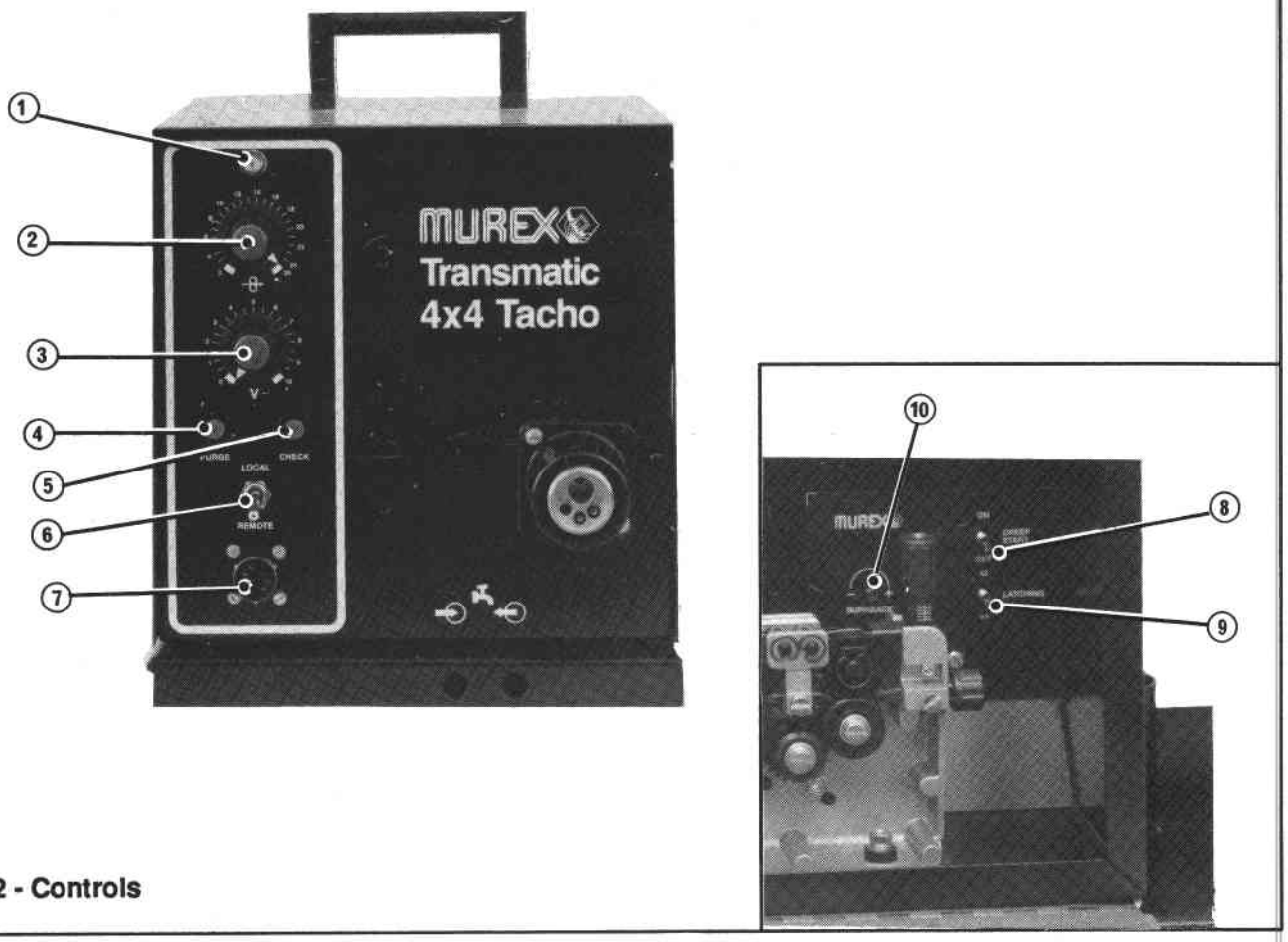


Fig 2 - Controls

CONTROLS

1. Indicator Lamp
Lamp illuminates when the unit is provided with power.

2. Wire Feed Speed Control
Provides continuously variable wire speed control. The wire speed is directly proportional to welding current so that increasing the speed increases the curent and vice-versa.

3. Voltage Control
Provides continuously variable control of the welding voltage.

Note: *This control will only operate when the feed unit is connected to a suitable electronically controlled welding power source. (e.g. Transmig 505).*

4. Gas Purge Button
When operated, opens the gas valve in the unit allowing the gas to flow through to the welding torch. It is used when initially adjusting the gas flow and when purging the gas lines of air.

5. Check Button
When operated, the wire feed motor will drive and the welding power source's main contactor will energise. This facility is particularly useful when the unit is fitted with the optional digital meter kit allowing the operator to display and preset the wire feed speed, and the open circuit voltage of the welding power source.

WARNING
The welding wire will be live when the Check Button is depressed.

Note: *Presetting of the open circuit voltage is only available when using a suitable electronically controlled welding power source such as the Transmig 505.*

6. Local/Remote Switch
When switched to **Local**, both wire feed speed and welding voltage can be controlled by the appropriate controls on the front panel of the feed unit.
When switched to **Remote** both wire feed speed and welding voltage can be controlled from a suitable remote control unit.

7. Remote Control Socket
Provides a connection for the fitting of a remote control unit.

8. Creep Start Switch
When switched to the Creep position, and the torch switch is depressed the wire feed motor will drive at 50% of the set speed until the welding arc initiates, at which time the wire feed motor will drive at the speed set by the wire feed potentiometer. This facility is particularly useful when larger diameter wires are being used.

9. Latching Switch
This switch provides torch switch latching facilities as follows:-

Unlatched (X2)
Press - Continuous welding whilst torch switch is held pressed.
Release - Welding stops.

Latched (X4)
Press - Gas Purge
Release - Continuous welding.
Press - Welding stops but gas continues to flow.
Release - Gas stops.

10. Burnback Control
Provides an adjustable burn back time which can be adjusted to suit the application.

INSTALLATION

INITIAL SETTING UP

1. Feed Rolls

Note: *When changing wire sizes the inlet guide, intermediate guide, outlet guide tube liner and feed rolls may need changing as given below.*

Before connecting the electrical and gas supplies, ensure that the equipment is set up for the type and size of wire to be used as follows:
(a) Power Source switched off.
(b) When changing wire sizes it may be necessary to change the feed rolls, outlet guide tube liner, inlet guide and intermediate guide.
The size of feed roll is stamped on the visible surface of the roll when fitted. - See 'Feed Roll changing'.

2. Interconnections

Lay out the torch leads keeping the leads as straight as possible.
Check that the power source is switched off.

CAUTION: *Do not extend the interconnections beyond 20m, If in doubt call your nearest Murex distributor for advice.*

3. Gas

Connect the shielding gas hose between the regulator and the connection provided on the rear panel.

4. Control and Power Cable

Connect the control and power cables between the fittings on the rear panel and the socket on the power source.

5. Work Return Lead.

Connect the work return lead to a clean area on the work piece.

WELDING WIRE

Fit the reel of welding wire:
1. Remove the hand nut from the hub.
2. Place the reel of wire on the hub so that the wire will be drawn off from the bottom. Ensure that the pin on the hub locates in the hole in the side of the reel. Replace the hand nut on the hub.
3. Release the end of the wire from the side of the reel but do not allow the coils to loosen. Cut off the kinked portion and remove any sharp edges from the end of the wire. This must be done every time the wire is threaded through the equipment.
4. Loosen the hub reel brake allen screw so that the reel revolves freely. Tighten the screw just enough to prevent over-run when wire feed stops. Too much pressure will cause excessive drag.
5. Lift the pressure roll arms.
6. Thread the wire through the inlet guide over the feed rolls and into the outlet guide, for approximately 50mm (2in).
Lower the pressure roll arms so that the welding wire is clamped into position in the groove.
7. Switch on the power source to obtain the 42V supply. Check the pilot light is illuminated.
8. Push the check button - See Fig. 2. and check that the wire is driven smoothly through the outlet guide.
9. Check that the wire feed is smooth and positive. If the wire slips in the feed rolls, tighten the pressure adjusters just enough to obtain positive wire feed drive.
Do not overtighten.
10. Cut off the wire to protrude 10mm from the torch connector.

TORCH

1. Check that the torch leads are laid out straight and connect the torch to the torch adaptor.
2. Remove the nozzle and contact tip from the torch.
Using the check or torch switch, feed the wire through the torch.
Thread a contact tip over the wire and screw it into the torch.
Tighten the contact tip with the key provided.
3. Fit the appropriate nozzle.
4. Press the torch switch and check that wire flows smoothly from the torch.

REPLACEMENTS AND ADJUSTMENT

1. Outlet Guide Tube Liner Removal

(a) Release the pressure rolls.
(b) Loosen the retaining cap nut on the brass outlet connection tube and push out the guide tube liner using a suitable soft tool (e.g. dowel) then withdraw it from the torch adaptor using a pair of long nose pliers.
If the guide tube liner does not move freely, it may be necessary to drive it out using a hard wooden dowel or old guide tube.

Note: *Do not use a screwdriver or metal tool to push out the tube. Use of such a tool may score the end of the guide tube and impair wire feeding.*

2. Feed Roll Changing

Remove the feedroll retaining screws. It will be necessary to give the screwdriver a sharp twist to avoid turning the motor.
Lift the pressure arms and pull off the feedrolls. When replacing the feedrolls, note the wire size which is stamped on the face of the rolls.
The required size must face outwards when the roll is fitted.
Fit the feedrolls and lower the pressure arms. Refit the retaining screws giving a sharp twist with the screwdriver to tighten.

3. Inlet Guide Replacement

Slacken retaining screw and pull inlet guide out from the rear.

4. Intermediate Guide Replacement

Release pressure arm. Slacken intermediate guide retaining screw. Remove rear feed roll. Slide out intermediate guide from the rear.

5. Overrun Adjustment

Tighten or unscrew the allen screw in the centre of the wire reel hub until sufficient hub friction is achieved to prevent overrun.

Note: *Do not over tighten or the wire will slip in the feed rolls.*

6. Feed Roll Pressure

Correct feed roll pressure will provide smooth, uninterrupted feeding of the wire. Inspection of the wire should reveal only slight marks from the feed rolls and no deformation of the wire. Use of the correct pressure is especially important when feeding aluminium wires. The pressure should be just enough to provide positive wire drive without slipping.

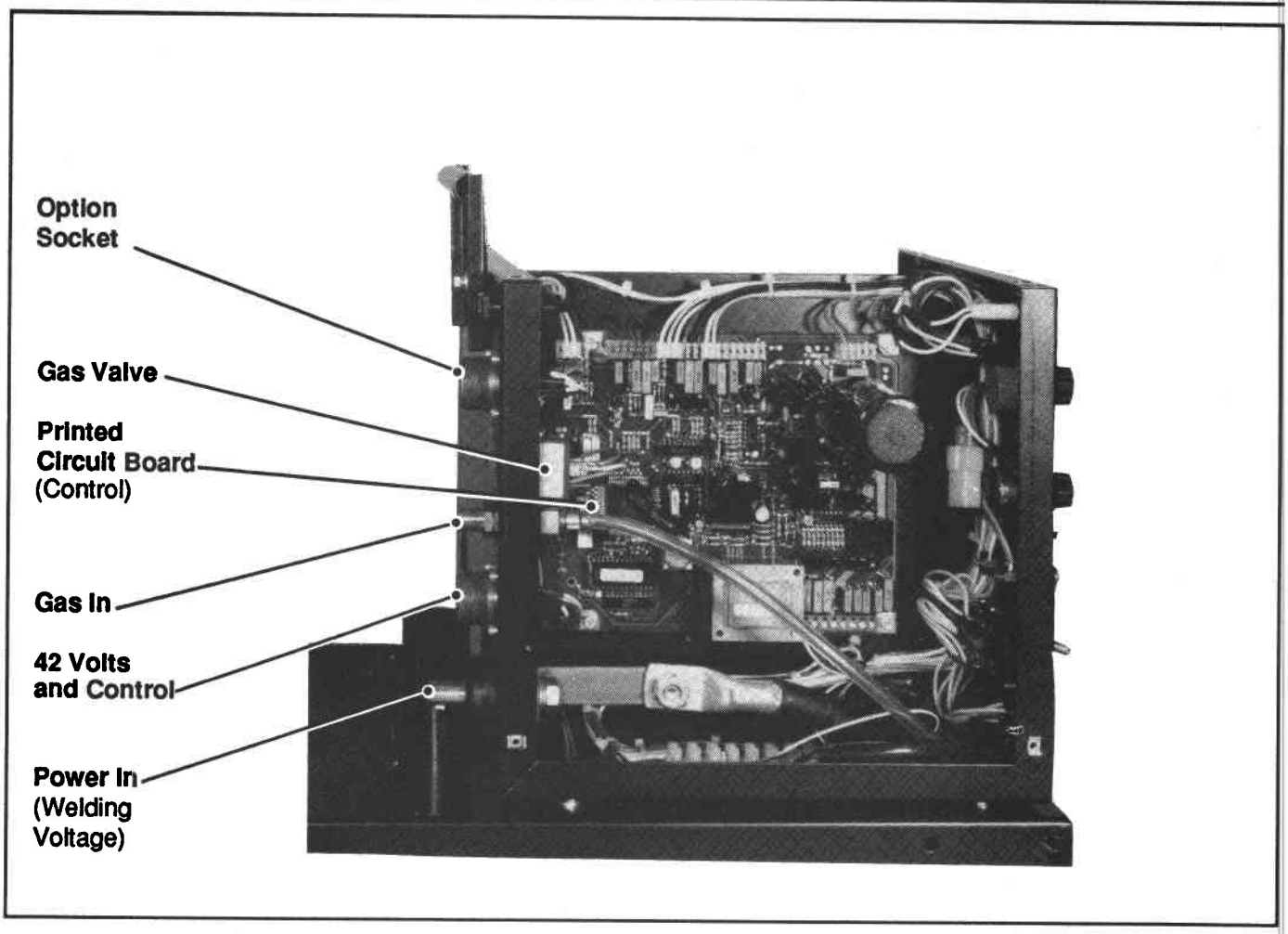


Fig 3 - Right Hand Side View

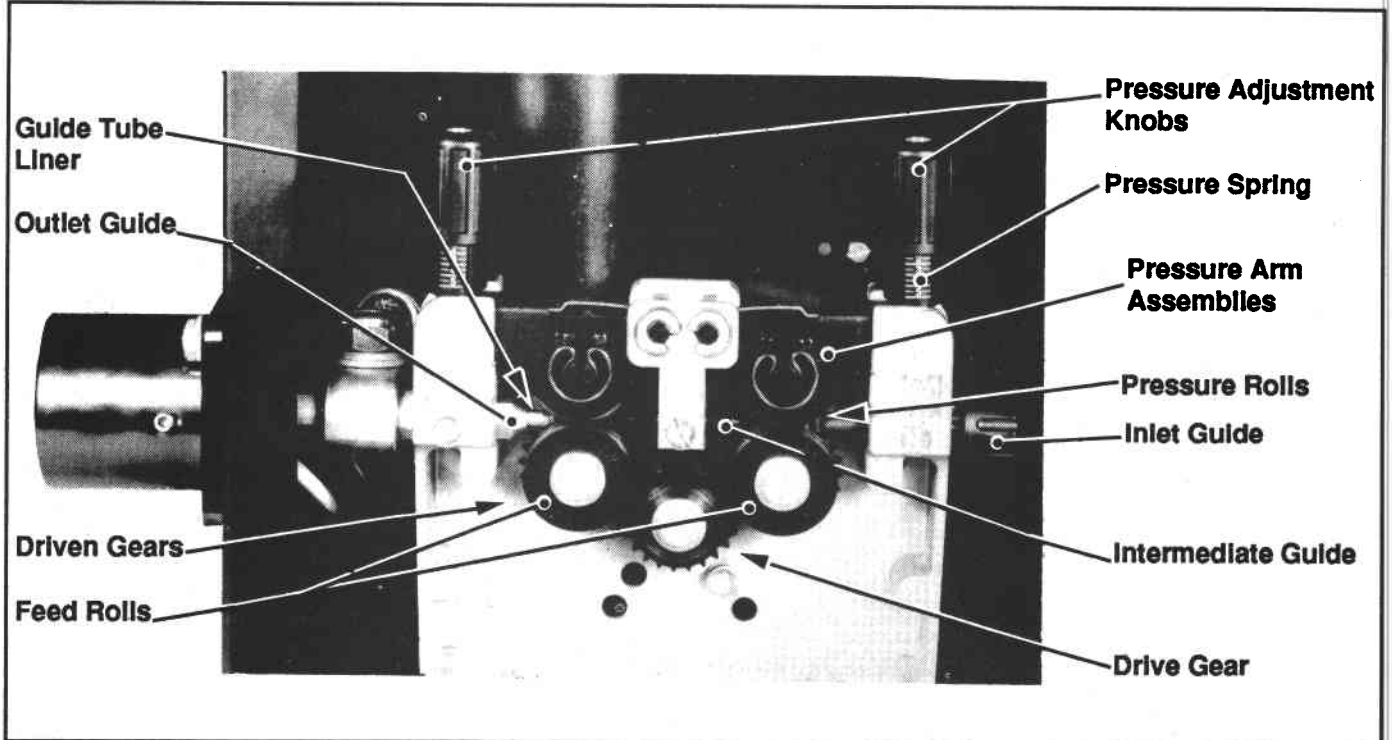


Fig. 4 - TM 4 x 4 Tacho Feed Roll Assembly