



Flextool

PNEUMATIC DRIVE UNIT

DA4

OPERATING INSTRUCTIONS



WARNING

To reduce the risk of injury, all operators and maintenance personnel must read and understand these instructions before operating, changing accessories, or performing maintenance on this power equipment. All possible situations cannot be covered in these instructions. However care must be exercised by everyone using, maintaining or working near this equipment.

CONTENTS

Introduction	2
Applications	2
Function	2
Function and controls	2
Hazards & risks	2-3
Operation	3
Care and preventive maintenance	3
Service	3
Cleaning and storage	3
Trouble shooting	4
Spare parts and service	4

INTRODUCTION

Thank you for your selection of Parchem equipment.

Parchem have specialised in the design and manufacture of quality products since 1951.

We have taken care in the design, manufacture and testing of this product. Should service or spare parts be required, prompt and efficient service is available from our branches.

General Safety Instructions for the Operation of Power Equipment

The goal of Parchem is to produce power equipment that helps the operator work safely and efficiently. The most important safety device for this or any tool is the operator. Care and good judgement are the best protection against injury. All possible hazards cannot be covered here, but we have tried to highlight some of the important items, individuals should look for and obey Caution, Warning and Danger signs placed on equipment, and displayed in the workplace. Operators should read and follow safety instructions packed with each product.

Learn how each machine works. Even if you have previously used similar machines, carefully check out each machine before you use it. Get the "feel" of it and know its capabilities, limitations, potential hazards, how it operates, and how it stops.

APPLICATIONS

Heavy duty concrete vibrators, 28 mm - 60 mm dia.

Submersible pumps, up to 50 mm discharge.

FUNCTION

This portable drive unit is designed to power flexshaft drive submersible pumps and model VP (pendulum) vibrators. A quick action 60 mm diameter flexible shaft coupling with aluminium alloy housing, rotary trigger latch and hardened 45 mm 3-tooth dog drive enable ease of use by allowing the operator to simply engage or disengage the flexible shaft coupling, to facilitate either a change of position or a change of flexshaft driven device.

FUNCTION AND CONTROLS

BELL HOUSING / ROTARY TRIGGER

Is mounted directly to the motor and enables quick connection between the coupling and the 3-tooth dog drive mounted on the crankshaft. The rotary trigger latch assures a positive engagement between drive dogs.

MOTOR

The drive unit has a precision built rotary type air motor.

The vanes take up their own wear and will last 5,000- 15,000 hour depending upon speed, method of oiling, operating pressure, and the precautions taken in maintaining the motor. The type of shaft seal used does not lend itself to operating pressures above 690 kPa (100 psi). The motor is cooled by expanded air and can be used up to ambient temperatures up to 120o C.

A moisture trap/filter and lubricator is in the air line ahead of motor. For efficient output ensure that the air supply hose is the same size or the next pipe size larger than the intake port of the motor. A muffler is fitted to the exhaust port.

HAZARDS AND RISKS

NEVER allow any person to operate a machine without adequate instruction.

ENSURE all operators read, understand and follow the operating instructions.

SERIOUS INJURY may result from improper or careless use of this machine

! MECHANICAL HAZARDS

DO NOT FLUSH the motor with kerosene or other combustible solvents.

WEAR EYE PROTECTION when operating the motor without the muffler after flushing. Keep face away from the exhaust port of the air motor. Foreign material exiting the exhaust port can be hazardous.

DO NOT USE COMBUSTIBLE GASES to drive the air motor as personal injury and explosion may result.

DO NOT OPERATE the air motor above the maximum recommended speed of 3,000 r/min.

DO NOT operate the machine unless all protective guards are in place.

KEEP hands and feet clear of rotating and moving parts as they will cause injury if contacted.

ENSURE that the air supply is disconnected before removing guards or making adjustments.

ENSURE both the machine and the operator are stable by setting up on level terrain and the machine will not move or fall while in operation or unattended.

DO NOT leave the machine in operation while it is unattended.

KEEP bystanders and animals clear of the work area.

ENSURE that repairs to the motor and machine are carried out by COMPETENT personnel.

! NOISE HAZARDS

EXCESSIVE NOISE can lead to temporary or permanent loss of hearing.

! ADDITIONAL HAZARDS

Slip/Trip/Fall is a major cause of serious injury or death.

Beware of excess hose, the flexible shaft and water left on the walking or work surface.

DO NOT allow waste water to accumulate under foot.

Exercise caution and ensure that the perimeter of elevated formwork or platforms is protected.

Exercise care when working in the vicinity of unprotected holes or excavations.

OPERATION

To engage the flexshaft, ensure the motor is stopped.

Turn the bell housing trigger 180 degrees. Insert the flexshaft coupling fully into the housing of the drive unit and release the trigger. Push the coupling into the housing and twist the flexible shaft until the drive dogs are fully engaged and the trigger returns to the horizontal position.

THE MOTOR MAY NOW BE STARTED

The starting torque is less than the running torque and could vary depending on the position at which the vanes stop in relation to the air inlet port. The speed and torque can be regulated by using the valve to obtain the desired power and to conserve air.

Drive units should be operated on a level surface. If the surface is not level the drive unit should be restrained to ensure that it does not move due to vibration or the weight of a pump and hose or vibrator.

LUBRICATION

Lubrication is necessary for all internal moving parts and rust prevention. Use a detergent SAE 10 automotive engine oil. For proper operation and maximum service life adjust the air line lubricator to feed two to three drops of oil through the motor every minute .

MOISTURE

Excessive moisture in the air line can cause rust formation in the motor and might also cause ice to form in the muffler due to expansion of air through the motor. A moisture problem can be corrected by installing a moisture separator in the line or by installing an aftercooler between the compressor and the air receiver.

IMPORTANT

Do not allow the air motor to "run free" at high speeds without load and improper lubrication. Excessive internal heat build up, loss of internal clearances and rapid motor damage will result

CARE AND PREVENTIVE MAINTENANCE

Check the condition of the drive dog regularly and that the three tooth drive dogs are fully meshed. The position of the drive dog on the crank shaft is critical and should also be checked. The correct distance from the face of the teeth to the face of the bell housing is 73 mm (2.875 inches).

Worn coupling housings and poorly operating triggers together with worn grooves in the shaft coupling will lead to a shorter operating life and should be replaced before they have worn excessively.

SERVICE

If the motor is sluggish or inefficient try flushing with a non toxic, non flammable industrial 'safety' solvent. To flush the unit, disconnect the air line and the muffler and add several teaspoonsful of solvent. Rotate the shaft by hand in both directions for a few minutes, reconnect the air line and slowly apply pressure until there is no trace of solvent in the exhaust air. Flush unit in a well ventilated.

area. Relubricate the motor with a squirt of oil in the chamber. If the vanes need replacing or foreign materials are present in motor chamber an experienced mechanic may remove the end plate opposite the drive shaft end. Do not pry with a screwdriver. It will dent the surface of the plate and body causing leaks. A puller tool should be used which will remove the end plate while maintaining the position of the shaft. New vanes should have the edge with the corners cut on an angle towards the bottom of the vane slot.

Do not hammer on the motor shaft or on the drive dog.

If the motor requires more than the installation of a service kit, it is usually quickest and least expensive to send the unit in for repair.

CLEANING AND STORAGE

Keep the unit clean and free of concrete residue.

Use clean, dry air at low pressure to "flush out" condensates, such as water. Re-lubricate the air motor with a squirt of oil in the chamber. Rotate the shaft by hand several times. Plug or cap each port.

TROUBLESHOOTING

SYMPTOM					POSSIBLE CAUSES
LOW TORQUE	LOW SPEED	DOES NOT RUN	RUNS HOT	RUNS OK THEN SLOWS DOWN	
X	X	X			Dirt or foreign material in the motor
X	X	X			Motor has internal rust
X	X				Insufficient air pressure
	X				insufficient airline or air hose size
	X			X	Restricted exhaust or blocked muffler
X	X	X	X		Poor lubrication
X	X	X		X	Drive is jammed
	X			X	Compressor is too small
	X			X	Compressor is too far from motor



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