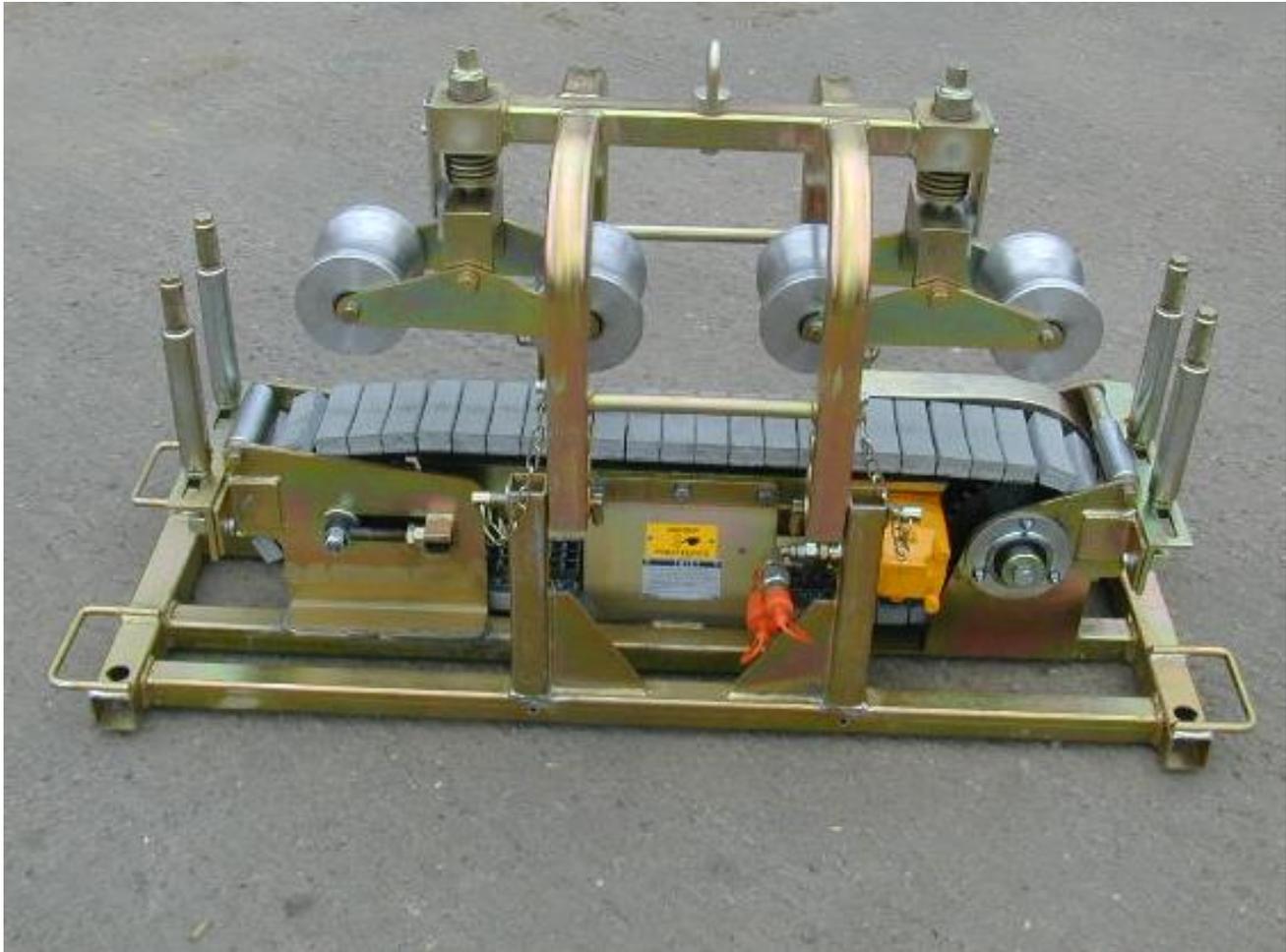


OPERATING MANUAL



C-1350 CABLE PUSHER

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1.0 INTRODUCTION



CBS Products (KT), Ltd is a long established U.K company situated in rural Oakham, Rutland. From its 4-acre site, CBS design, manufacture, test and market a comprehensive range of quality products for the electricity, telecommunication and CATV industries. Products include overhead line and underground winches, cable drum trailers and stands, stringing equipment, in fact everything required for the installation or erection of conductors and cables.

With a long history of designing standard and specialised equipment to meet the needs of customers worldwide, CBS has invested in the latest computer aided design and analysis systems and an integrated manufacturing plant.

The CBS Design Facility is available to discuss specific customer requirements for any product / project, existing or new. Please contact CBS Products Ltd for further information.

CBS Products (KT), Ltd operate stringent quality controls throughout the organisation and has a quality assurance system certificated to ISO 9001: 2008. Our total commitment to providing quality products and service is reflected in the high standard of the finish, use and long life of all our products.

There are certain controls and control functions, included in the cable pusher, which are critical to the safe operation of the cable pusher. These **safety critical** controls are clearly marked in the manual with the following symbol. It is imperative that these operating and maintenance procedures are followed exactly, to ensure safe operation.



2.0 SAFETY INSTRUCTIONS

THIS EQUIPMENT MUST ONLY BE USED BY AUTHORISED PERSONNEL, WHO HAVE BEEN SUITABLY TRAINED AND COMPETENT TO DO SO.

THESE INSTRUCTIONS ARE TO BE MADE AVAILABLE TO OPERATORS OF THIS EQUIPMENT AT ALL TIMES, FAILURE TO OBSERVE THESE SAFETY INSTRUCTIONS COULD RESULT IN SERIOUS PERSONAL INJURY AND / OR PROPERTY DAMAGE.

WORK AREA AND GENERAL SAFETY

1. Read and understand the operation and maintenance manual supplied with this equipment. Keep it in a convenient place for future reference.
2. Keep children and untrained personnel away from this equipment whilst in operation.
3. Keep all guards and safety devices in place. Do not operate this equipment with guards removed or damaged.
4. Keep hands and feet and loose clothing away from moving parts especially at cable entry point.
5. Always stop the machine and isolate the hydraulic services before carrying out lubrication and servicing.
6. Check machine before starting for worn or damaged parts. Check that all nuts and bolts are tight.
7. If machine is left unattended, ensure that unauthorised use is prevented.
8. Never leave the machine unattended whilst in use.
9. Consider the use of safety barriers, especially when used in public places.
10. Beware of pinch points involved with rotating components, e.g. screw operated tractor drive lifting mechanisms.
11. Beware of hot surfaces, machine uses hydraulic services.
12. When operating the machine always wear eye protection, hard hat, safety shoes and leather gloves. The machine operates with hydraulic oil at pressure of 60 bar.
13. Some component and assembly parts are in excess of 25kg (55lb). When lifting care must be taken, ensure sufficient man power/lifting gear is available, to prevent personal injury and damage to the machine.

14. Prior to installation ensure the sub duct route (if applicable) is connected properly.

GENERAL HYDRAULIC SAFETY INSTRUCTIONS

Escaping fluids under pressure can penetrate the skin and cause serious personal injury. Observe the following precautions to avoid hydraulic hazards:-

1. Tighten, secure all connections before applying pressure. Relieve pressure when connecting or disconnecting hoses when servicing the unit.
2. Check for leaks with a piece of cardboard. **Do not use your hands!**
3. Do not exceed working pressure of hydraulic hoses.
4. Visually inspect hoses regularly and replace if damaged.

3.0 GENERAL DESCRIPTION



C-1350 CABLE PUSHER

The machine comprises of an hydraulically driven cable pusher unit designed to provide an effective and safe method of installing 30 –150 Dia. cable up to a speed of 10 metres/min. The pusher unit is mounted on a sturdy anti corrosion treated tubular steel frame and is powered by a hydraulic supply system operating from a recommended supply of 110 bar x 18 litres/min.

The cable pusher is fitted with adjustable vertical rollers at each end to guide the cable through the machine.

2 x hydraulic hoses x 7 metres long can be supplied as an optional extra.

The unit is CE Approved.

FEATURES

CABLE FEEDER

- Manufactured from fabricated and machined steel
- Hydraulically powered
- Unit lifts and splits to allow insertion of cable between drive chain and roller.
- Drive chain has, optimised profile and moulded to chain drive unit ensuring long life between replacement..
- Belt tension can be set by means of adjustable chain drive tensioner fitted to side of unit.

CHASSIS

- Lightweight anti corrosion painted tubular steel frame
- Hydraulic control lever mounted on handle
- Quick release hydraulic hose couplings

4.0 SPECIFICATION

Serial No: 018

OPERATING CAPACITIES

Pushing Force:	500 - 700 kg at 110 bar
Pushing Speed:	0 – 10 m/min Max.
Minimum cable diameter	30 mm
Maximum cable diameter	150 mm

HYDRAULIC DRIVE SYSTEM

Operating Pressure:	110 bar
Flow:	18 Litres/min (recommended)
Relief Valve Setting:	110 bar

DIMENSIONS AND WEIGHTS

Height:	770 mm
Length:	1390 mm
Width:	500 mm
Weight:	95 kg

Drive Chain Lubrication:	Metaflux 70-07 Grease Spray
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5.0 OPERATING PROCEDURE

IT IS IMPERATIVE THAT ALL PERSONS USING, OPERATING OR MAINTAINING THIS WINCH BE FULLY TRAINED AND COMPETENT TO DO SO, AND HAVE READ THE ENTIRE OPERATING MANUAL.



CBS PRODUCTS LTD CANNOT BE HELD RESPONSIBLE FOR MIS-USE OF THIS EQUIPMENT.

- Position the cable pusher at the desired angle for entry into the joint box, ideally this should be on firm level ground.
- Ensure that the cable pusher is adequately anchored down / restrained.
- Raise the upper roller assembly by removing 2 retaining pins from one side and pivot roller assembly out of the way.
- For large diameter cables it may be advantageous to remove 2 vertical end rollers from the same side as of the machine as the removed retaining pins.
- Cable can now be laid onto drive chain.
- Replace vertical end rollers, (if removed to allow easy access to insert the cable) and adjust to give a 5mm clearance each side of the cable.
- Ensure the upper rollers are positioned at the top position of their travel.
- Pivot the upper roller assembly back to the operating position, ensure that the best hole position to suit the size of the cable is selected and refit the 2 retaining pins, all 4 retaining pins may need to be repositioned depending on the size of the cable.
- Lower the two sets of rollers in conjunction by tightening the main jacking screws until contact is made with the cable, then turn the jacking screw a further 1½ turns.
- Connect the hydraulic hoses from the hydraulic power pack and suitable control valve via the quick release couplings.
- Start the power pack and operate the hydraulic control lever to commence the cable feed operation, NOTE the power pack operator must be competent and fully trained in the use of the power pack.



6.0 MAINTENANCE

To ensure reliable service from the Cable Pusher, CBS Products (KT), Ltd recommend the unit to be completely serviced at 6 monthly intervals.

TRACTOR DRIVE

Inspect the chain drive blocks for wear. Clean all drive blocks after each operation or as required. (it may be necessary to remove the upper roller frame assembly to clean thoroughly). Check the chain tension weekly and adjust if necessary with the two external adjustment screws. (Do not over tension – the chain should just slightly lift off the upper chain guides when pulled at the centre by finger).

GENERAL

The machine should be wiped clean after use and stored under cover, clean any dirt that may have accumulated on the base.

Oil the frame pivot points monthly and apply grease to the jacking screw thread. After each use clean off any dirt/debris from the cable guide rollers and upper frame rollers.

The chain should be lubricated every week by application of Metaflux Spray Grease 70-07. This is achieved by running the unit (without any cable)

Do not over lubricate as this may lead to contamination of the drive belts. Should contamination of the belts occur, wipe the belts thoroughly clean before attempting any cable pushing operation.

Check the condition of the hydraulic hoses each time and replace if worn or damaged.

6.1 MAINTENANCE SCHEDULE

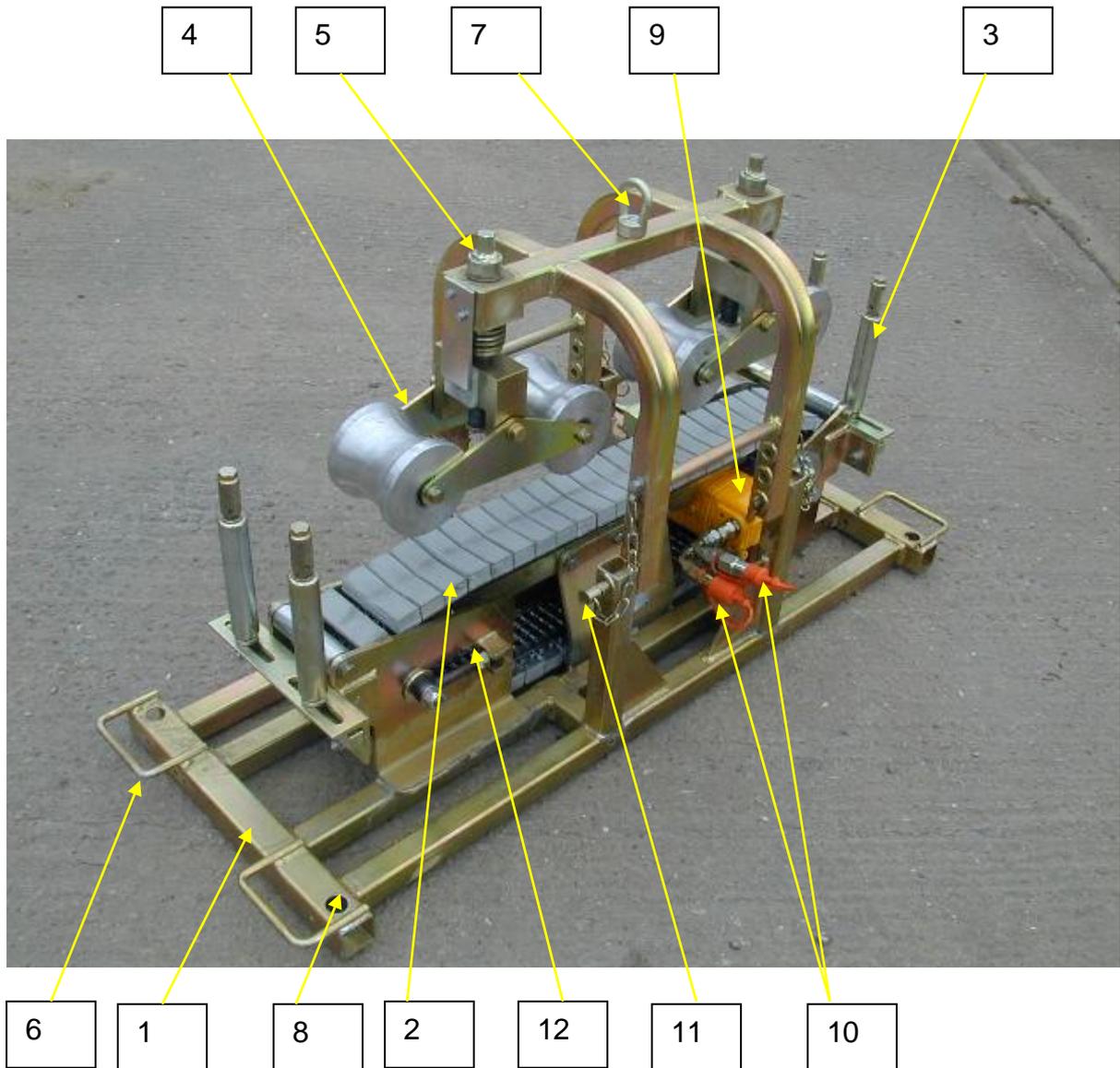
PROCEDURE	DAILY	WEEKLY	MONTHLY
Clean all assemblies and components thoroughly	✓	✓	✓
Inspect hydraulic hoses for leaks and cracks	✓	✓	✓
Inspect fasteners, screws and retaining pins/wires	✓	✓	✓
Check/Adjust chain tension		✓	✓
Check tractor drive pads for wear/damage		✓	✓
Clean cable entry bracket	✓	✓	✓
Oil the frame pivot points			✓
Grease jacking screw thread			✓
Oil oilite bearings with light machine oil			✓
Lubricate drive chain*		✓	✓

- Should be more often if subjected to enable normal use and/or excessive contamination.

7.0 MONTHLY SERVICE – CHECK LIST

- Check the chain for excessive wear. Replace, if required – and lubricate with the spray grease provided.
- Remove any debris / dirt from the drive belts, upper frame rollers and cable guide rollers and base.
- Check all other moving parts e.g. bearings, shafts, sprockets etc – and lubricate.
- Check main jacking screws – and lubricate.
- Check all hydraulic fittings for leaks.
- Check the hydraulic hoses for external damage.
- Check entry /exit guide rollers and upper frame rollers for excessive wear.

9.0 EQUIPMENT LAYOUT



- 1 BASE FRAME
- 2 DRIVE BELT
- 3 VERTICAL END ROLLER (CABLE GUIDE)
- 4 UPPER ROLLER ASSEMBLY
- 5 UPPER ROLLER ADJUSTING SCREW
- 6 LIFTING HANDLE
- 7 UNIT LIFTING EYE BOLT
- 8 GROUND ANCHOR / CABLE PUSHER RESTRAINING HOLE
- 9 HYDRAULIC MOTOR
- 10 HYDRAULIC HOSE CONNECTIONS
- 11 UPPER ROLLER FRAME RETAINING PIN
- 12 DRIVE CHAIN ADJUSTING NUT

10.0 RECOMMENDED SPARES LIST

For spare parts always quote the model type serial number and contact:-

**CBS PRODUCTS (KT), LIMITED
PILLINGS ROAD
OAKHAM
RUTLAND
LE15 6QF
UK**

TEL: +44 (0) 1572 723665/6

FAX: +44 (0) 1572 756009

E-MAIL: sales@cbsproducts.com

Website: www.cbsproducts.com

TYPICAL SPARES:

Part No.	Description	Qty Required
C-1350-AS1212	Chain 3/4" Triplex	2
C-HYD-M-057-F	Hydraulic Motor	2
C-C-SPRAY-1111-F	Metaflux Chain Spray 70-07	1

Please give as much information as possible to ensure correct identification and supply of spare parts.

CE CERTIFICATE

DECLARATION OF CONFORMITY

MANUFACTURER: CBS Products (KT), Limited
Pillings Road
OAKHAM
Rutland
LE15 6QF

MODEL NUMBER: C-1350-AS1002-R1

SERIAL NUMBER: **018**

DESCRIPTION: Cable Pusher

MANUFACTURED IN ACCORDANCE WITH THE SUPPLY OF MACHINERY (SAFETY) REGULATIONS 1992 (S.I. 1992/3073) AND IN CONFORMANCE WITH THE ESSENTIAL HEALTH AND SAFETY REQUIREMENTS.

RESPONSIBLE PERSON – MR ANDREW SIBUN – TECHNICAL MANAGER

SIGNED ON BEHALF OF RESPONSIBLE PERSON

..... MR TONY LEWIS – OPERATIONS DIRECTOR