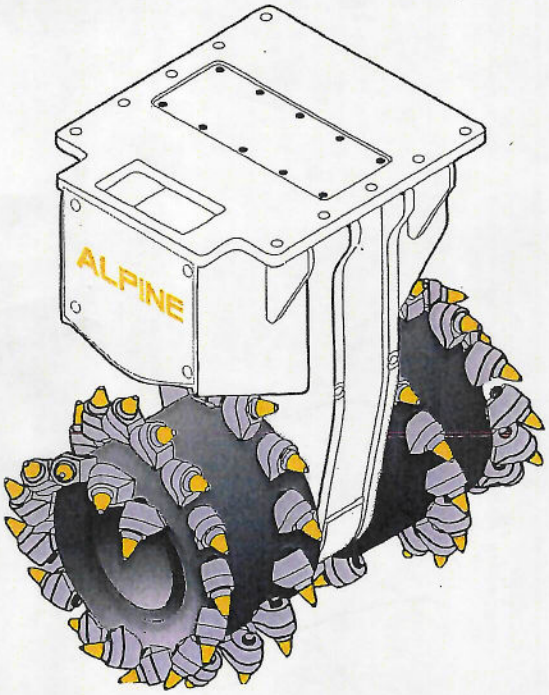
HYDRAULIC TRANSVERSE CUTTING UNIT TC-B (WS30)

OPERATING MANUAL
PARTS BOOK

Serial # 0030WS/0651



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8 Technical Data

The hydraulic transverse cutting unit WS30N made by TEREX can be supplied with scaling/grinding, cutting, or demolition drums. (If different picks are required, contact your responsible TEREX-dealer).
Different motor displacements are available for different pump capacities.

8.1 Hydraulic transverse cutting units installation and commissioning report

<table>
<tr><td colspan="2">Dealer:</td><td colspan="2">Customer:</td></tr>
<tr><td colspan="2">Type of cutting unit :
.....

Type of hydraulic motor :
LD / MD / HD / XHD</td><td colspan="2">Cutting unit identification no.:
.....</td></tr>
<tr><td>Putting into operation Place / Date:</td><td>.....</td><td>Type of excavator / base vehicle:
Vehicle identity no.:</td><td>.....
.....</td></tr>
<tr><td>Excavator drive power:</td><td>.....hp</td><td>Oil flow hammer and cutting unit control circuit:</td><td>.....US gal./min</td></tr>
<tr><td>Hydr. connection of cutting unit:</td><td>• Hammer control circuit
• Grab control circuit
• Other control circuit</td><td>Secondary protection for hammer control circuit:</td><td>.....psi</td></tr>
<tr><td>Motor drain line: (pressureless in oil tank)</td><td>Yes / No</td><td>Combination of return and drain oil lines: (following operat. instructions)</td><td>Yes / No
(Only permissible in exceptional cases!)</td></tr>
<tr><td>Pressure / flow adjustment for cutting unit control circuit:</td><td>Hydraulic pressure</td><td>Hydraulic oil flow</td><td rowspan="7"></td></tr>
<tr><td></td><td>1450 psi</td><td>.....US gal./min</td></tr>
<tr><td></td><td>2175 psi</td><td>.....US gal./min</td></tr>
<tr><td></td><td>2900 psi</td><td>.....US gal./min</td></tr>
<tr><td></td><td>3625 psi</td><td>.....US gal./min</td></tr>
<tr><td></td><td>4350 psi</td><td>.....US gal./min</td></tr>
<tr><td></td><td>5076 psi</td><td>.....US gal./min</td></tr>
<tr><td colspan="2">Back pressure in drain line (on cutting unit exit)
.....psi

Underwater operation: ..... Yes / No</td><td colspan="2">Back pressure in return line (on cutting unit exit)
.....psi

If yes - gear box breather concealed: ..... Yes / No</td></tr>
</table>

Further information:(type of application, geology etc.)	Miscellaneous:
The receipt of the cutting unit in perfect condition, the receipt of the operating instructions as well as the instructions obtained for the proper operation and maintenance of the hydraulic cutting unit and correct hydraulic connections and adjustment of the base vehicle (excavator) is confirmed herewith.	

Place / Date:	Name / Signature (dealer customer service):		Name / Signature (customer):
.....	.....		.....
Note: In case of conversion / mounting of the cutting unit on a different excavator, a new report must be made!			

8.2 Start - up procedure for cutting unit

8.2.1 Before start - up

1. Check flow in hammer circuit of excavator, with a flow meter.
2. Adjust pressure in hammer circuit to suit cutter unit. The combination of flow and pressure must not exceed the power rating of the cutter unit. Knowing the available flow, here's how to calculate the required maximum pressure.

$$\text{Pressure (in psi)} = \frac{\text{Power of the cutter unit (HP) x 600 (a constant)}}{\text{Flow (US gal.)}}$$

– If for example the available flow in the hammer circuit is say 23 US gal. per minute and the cutter unit is a WS30, which has a maximum power output of 40 hp. Then:

$$\text{The maximum pressure setting should be} = \frac{\text{40 (HP) x 600 (a constant)}}{\text{23 (US gal.)}} = 1043 \text{ psi}$$

3. Check the oil level in the cutter gearbox.

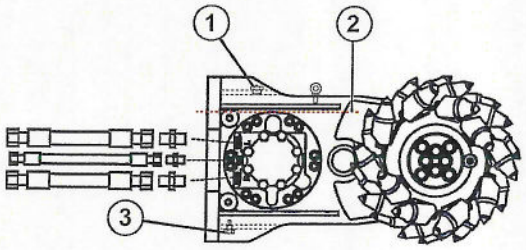


Fig.88 Check oil level

1 Filler and air discharge opening

2 Oil level

3 Magnetic plug

4. Check that the hydraulic motor of the cutter unit is primed.It is important that the hydraulic motor is filled with hydraulic oil before every start - up, otherwise damage could occur.

- Fill the casing by disconnecting the drain line at the reservoir end.
- Pour hydraulic oil into the drain line.
- Loosen the purge screw (A).
- When oil comes out of this screw, tighten the screw again.
- Reconnect the drain line.

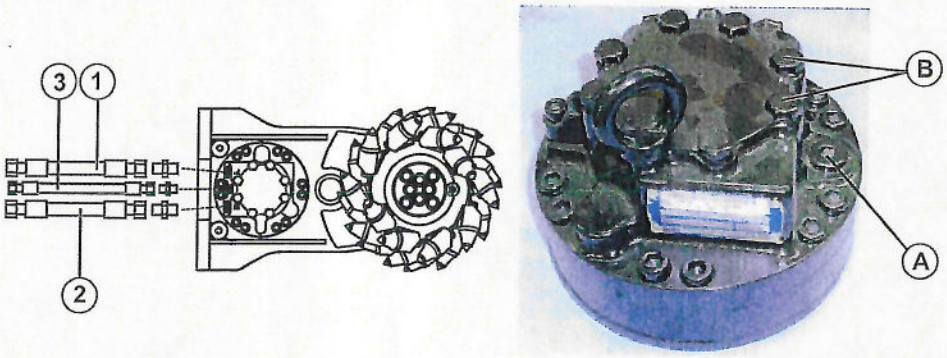


Fig.89 Pressure, drain and return lines; Purge and Hexagonal screws

1 = Pressure line
2 = Return line
3 = Drain line
A = Purge screw
B = Hexagonal screw

5. Check that the motor drain returns directly to tank without restriction, this line should run directly to the hydraulic tank of the excavator and not joined into any other hydraulic line or valve and should have no other restriction. please contact our technical department for alternative if this is not possible.

6. Before starting the cutter unit check the following:

- that the cutter unit and adaptor bracket are properly fastened to the excavator and all hydraulic hoses and fittings are correctly fastened.

With cutter unit running freely

7. Check for correct direction of rotation of cutter drums. If incorrect, change over the hydraulic pressure and return hoses at the excavator auxiliary (hammer) circuit connection point.

8. Check pressure in motor return line and drain line.

- With a pressure gauge fitted at the hammer circuit connection point and the Cutter Unit running freely: -

– Check the pressure in the drain line. This should be as low as possible but not greater than 43.5 psi.

- Check the pressure in the return line. This must be at least 72.5 - 145 psi greater than that in the drain line to ensure the correct working of the hydraulic motor.
- If the hydraulic motor is noisy during operation (rattling), the return line pressure is insufficient and a pretension valve (72.5 - 145 psi) is required in the return line respectively. The pretension pressure must be increased in steps of additional 72.5 - 145 psi.
- If the back pressure in the return line is increased (> 217 psi), the hydraulic system heats up and the cutting unit performance decreases. If the hydraulic oil temperature is too high (> 2720 °F), the cutting unit motor will be damaged!
- Complete and return the installation / commisioning report to "Terex - Schaeff to comply with the 'Warranty Conditions".

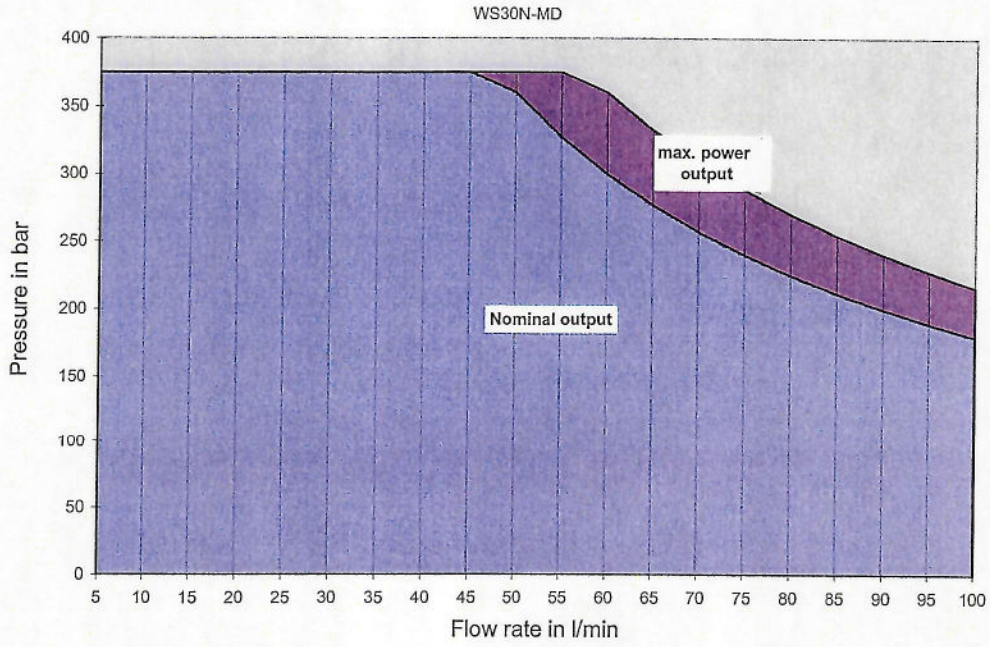
8.4 Specification WS30N-MD (displacement – 468 cm^3)

Nominal output	40 HP (30 kW)
Required flow rate	18 min - 32 max U.S. gal. /min
Recommended flow rate	26 U.S. gal. /min at 2538 psi
Max. pressure	5438 psi - see output graph
Gearbox ratio	1.76
Output shaft torque	315 lbf at 5076 psi
Output shaft speed	120 rpm at 26 U.S. gal. /min
Pick speed	8.2 ft/s at 26 U.S. gal. /min
Pick force	2.3 t at 5076 psi
Weight (without adapter)	

Attention

Observe that the cutting unit must never be operated at maximum pressure and maximum flow rate at the same time as this would exceed the admissible input power. The cutting unit is to be used in the range of rated capacity. ***Pay attention to the output graph.***

If in doubt, contact our Technical Sales Dept., Langenburg, Germany.



Conversion in psi (1 bar = 14.503 psi)
Conversion in US gal./min (1 l/min = 0.2642 US gal./min)

8.6 Cutting drums

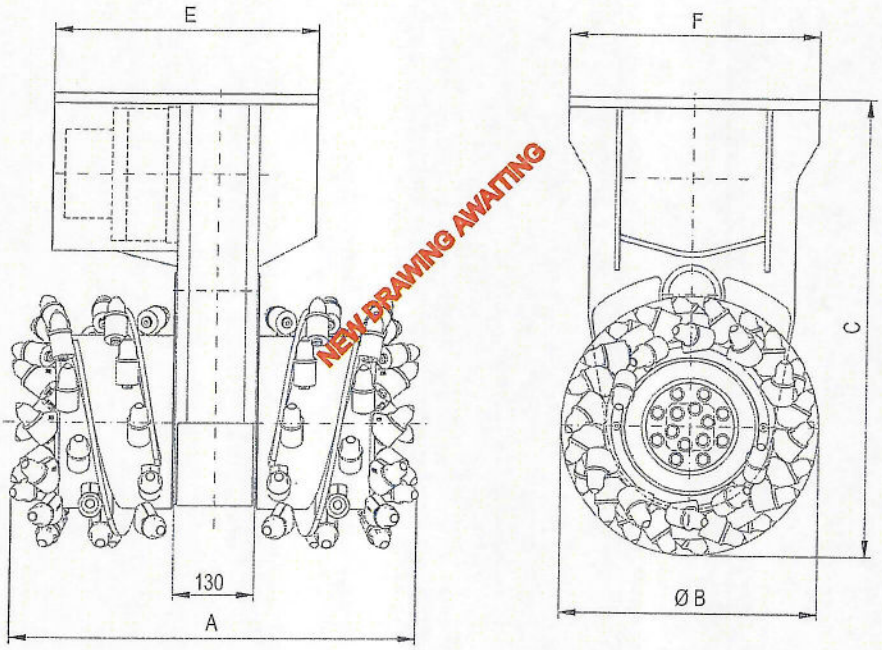


Fig.90 Cutting drums

Type of drum	Width of drum A mm	Drum diameter B mm	Mounting height C mm
Rock drum	500	320	590
Scaling/ grinding drum	535	295	580
Demolition drum	500	320	590

Dimensions in millimetres (1 inch = 25.4 mm)