DESCH Planox® - PH

Hydraulically actuated friction clutches
DESCH Planox® - PH friction clutches

Function

The DESCH Planox® friction clutches are engageable respective disengageable dry-friction clutches which transmit torque by friction.

These clutches permit rapid acceleration of the driven machines or machinery groups as well as reliable torque transmission. Machines connected with friction clutches are protected against damage which can occur through peak torques during operation or during the engaging/disengaging process.

Hydraulically actuated

Hydraulically actuated Planox® clutches, type PH, have the design and mode operation as the pneumatically actuated Planox® clutches.

The oil is supplied axially by a rotary union. The torque indicated in the list is configured for an oil pressure of 35 bar.

Special ventilation springs enable safe operation even when the machine is inclined. All versions of the clutch can be equipped with an additional flexible clutch for reducing the torsional vibrations. For the use of hydraulic pumps, we provide complete drive units comprised of pump drive and Planox® clutch.
Technology

Drive system 1
- directly mounted on motor
- with flexible coupling

Drive system 2
- mounting at PVG

Examples

Road Milling Machine

Crusher

Shredder
Technical Data

Measurements under operating conditions
Reduction of torsial vibrations using a combination of Planox® clutch and flexible coupling.

<table>
<thead>
<tr>
<th>size</th>
<th>torque $T_0$ at 35 bar Nm</th>
<th>max. speed rpm</th>
<th>need of oil per actuation with new friction discs</th>
<th>Anschlussmaß SAE J 617 housing size</th>
<th>SAE J 620d, J 621 flywheel size</th>
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<td>81</td>
<td>765</td>
<td>3200</td>
<td>0,021, 0,039</td>
<td>5-4-3</td>
<td>8”</td>
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<tr>
<td>101</td>
<td>1260</td>
<td>3000</td>
<td>0,035, 0,064</td>
<td>4-3-2-1</td>
<td>10”</td>
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<tr>
<td>111</td>
<td>1420</td>
<td>2850</td>
<td>0,035, 0,064</td>
<td>4-3-2-1</td>
<td>11½”</td>
</tr>
<tr>
<td>112</td>
<td>2870</td>
<td>2850</td>
<td>0,035, 0,092</td>
<td>3-2-1-0</td>
<td>11½”</td>
</tr>
<tr>
<td>113</td>
<td>4240</td>
<td>2850</td>
<td>0,035, 0,092</td>
<td>3-2-1-0</td>
<td>11½”</td>
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<tr>
<td>142</td>
<td>5240</td>
<td>2500</td>
<td>0,058, 0,145</td>
<td>1-0-00</td>
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<td>17300</td>
<td>1600</td>
<td>0,087, 0,398</td>
<td>00</td>
<td>21”</td>
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</tbody>
</table>

Measurement of vibration and torque through telemetry at side.

Torsional vibrations measured without flexible coupling.

Torsional vibrations measured with flexible coupling.
Example of hydraulic actuating device

The hydraulic control of the clutch in the example consists of a 4/2-way-valve, an adjustable throttle-check-valve and an accumulator. A manometer and pressure switch are used for pressure monitoring. The clutch is connected to the hydraulic unit by a rotary union and a short flexible hose.

To ensure a smooth engagement, the pressure build-up can be controlled via the throttle-check-valve. The accumulator is used to absorb pressure peaks and adjust pressure fluctuations. For disengagement the oil is to be led back pressure free into the tank.