These shields are designed for machines that require protection from chips and coolant generated at the point of operation.
SECTION 1—SAFETY CHIP SHIELDS

Shield Installation Instructions

Introduction

These safety chip shields provide protection from flying chips, coolant, and rotating parts. They fit drill presses, small mills, and can be magnetically or permanently mounted.

The clear polycarbonate chip shield provides total visibility to the point of operation. It locks in any vertical position and provides easy access to the work area by swinging away for tool changes.

Installation

1. Remove all packing material from the shield and its mounting assembly.
2. To permanently mount the shield, drill and tap holes on the machine where the shield is to be located. Be careful when drilling holes into the frame of the machine. Avoid internal components that could affect machine operation.
3. Using the mounting plate and fasteners (not furnished), attach the shield to the machine.

REPLACEMENT PARTS FOR KYL-001

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>KYM-001</td>
<td>Polycarbonate Shield Only</td>
</tr>
<tr>
<td>KYM-002</td>
<td>Mounting Arm</td>
</tr>
<tr>
<td>KYM-003</td>
<td>Magnetic Base and Carrier</td>
</tr>
<tr>
<td>FKT-213</td>
<td>Mounting Plate</td>
</tr>
</tbody>
</table>

REPLACEMENT PARTS FOR KYL-055

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>KYL-044</td>
<td>Polycarbonate Shield Only</td>
</tr>
<tr>
<td>FKT-792</td>
<td>Mounting Arm</td>
</tr>
<tr>
<td>KYM-069</td>
<td>Magnetic Base and Carrier</td>
</tr>
<tr>
<td>FKT-083</td>
<td>T-Handle Knob</td>
</tr>
<tr>
<td>FKT-213</td>
<td>Mounting Plate</td>
</tr>
</tbody>
</table>

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SECTION 2—TELESCOPING DRILL SHIELDS
Shield Installation Instructions

Part Nos. DXS-500 & DXS-700

A large number of bench and pedestal drilling machines (drill presses) are manufactured with a quill diameter of approximately 2 ¾". For this reason, a drill shield holder is available to attach the drill shield to the quill. The shield holder is bored to a standard size of 2 ¾" diameter. This drill shield fits a circular quill diameter between 2 ⅞" and 2 ¾" without the use of an adaptor bushing. If an adaptor bushing is required for smaller quill sizes, see page 4.

Drill Shields

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>DXS-500</td>
<td>2 ⅞&quot; Standard Bore, 2-Tier, 3&quot; stroke, 2 ⅞&quot; Min. Quill Diameter</td>
</tr>
<tr>
<td>DXS-700</td>
<td>2 ⅞&quot; Standard Bore, 3-Tier, 3&quot; or 6&quot; stroke, 2 ⅞&quot; Min. Quill Diameter</td>
</tr>
</tbody>
</table>

Installation

SHIELD INSTALLATION WITHOUT BUSHING

1. Attach the drill shield holder directly onto the quill with a diameter of 2 ¾" to 2". If the quill size is smaller, an adaptor bushing is needed (see page 4).
2. The shield locator pin should be facing toward the front of the machine. See Figure 2.2.
3. Tighten the clamp screw until the drill shield holder is securely held onto the machine quill. See Figure 2.3.
4. The shield is in the proper position for production when the inner sleeve of the shield is fully extended.

Photo 2.1
Part No. DXS-500
2-Tier Drill Shield

Figure 2.2—Side View

Figure 2.1
Dimensions for Part No. DXS-500

SHIELD REMOVAL

1. The drill shield portion can be removed from the holder for chuck or drill bit changes. Sharply pull down on the body of the drill shield.
   - Three spring-loaded ball catches hold the shield in position in the holder. See Figure 2.3.
2. To put the shield back into the holder, align the locator pin with the slot in the shield and push up until the ball catches grab and hold.

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SHIELD INSTALLATION WITH ADAPTOR BUSHINGS

For smaller quill diameters between 2" and 2 3/8", a series of ten adaptor bushings are available (see Table 2.1).

When attaching a drill shield holder to a machine quill which requires the application of an adaptor bushing, the following instructions should be followed. These are illustrated in Figures 2.4 and 2.5.

1. Loosen the clamp screw (1) until the threads release from the other half of the drill shield holder.
2. Place the adaptor bushing (3) into the bore of the drill shield holder (Photo 2.2). Install the holder on the machine quill (4). The shield locator pin (6) should be toward the front of the machine.

Note: The split in the adaptor bushing (5) will close when tightening the clamp screw (1) and will cause the bushing to distort as shown in Figure 2.4.

3. Retighten the clamp screw (1) until the drill shield holder is securely held onto the machine quill (4).

Replacing The Polycarbonate Window

The window on the lowest portion of the drill shield is replaceable because it will become scratched and opaque from normal wear and tear. For comfortable operator vision, the window should be replaced whenever it becomes cloudy. To replace it:

1. Loosen screw A and slide the window upwards out of the frame. See Photo 2.3.
2. Take the new window and slide it into the frame. Secure the window by tightening screw A.

Replacement Window

Part No. DXS-100 Window only—fits all drill shields on pages 3-5.
SECTION 2—TELESCOPING DRILL SHIELDS

Shield Installation Instructions

Part Nos. DXS-600 & DXS-800

These drill shields have a three-lug mounting holder which attaches to the quill of the drill press. These types of drill shields are usually applied when the machine quill has an irregular shape. The holder is ready to install on drills with 3” diameter quills. If the drill press has a larger quill, the inside diameter of the holder can be bored up to 3 ½”.

Drill Shields

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DXS-600</td>
<td>2 3/4” Standard Bore, 2-Tier, Three-Lug Mounting</td>
</tr>
<tr>
<td>DXS-800</td>
<td>2 3/4” Standard Bore, 3-Tier, 3” and 6” stroke, Three-Lug Mounting</td>
</tr>
</tbody>
</table>

Installation

1. If the machine quill is larger than 3”, bore the holder up to the diameter required (3 ½” maximum).
2. Select the mounting location on the machine quill.
3. Attach the drill shield holder to the quill by tightening the setscrew in each lug. See Figure 2.6.
4. The shield is in the proper position for production when the inner sleeve of the shield is fully extended.

Adjustments on 3-Tier Shield

3” TRAVEL

For 3” travel of the chuck and drill bit, tighten the thumbscrew into any one of the three holes in the top tier (see Figure 2.7). Only the lower tier travels allowing a 3” stroke. See Photo 2.4.

The overall length of the shield can be adjusted depending on which hole is chosen in the top tier:
- In the bottom hole (Photo 2.4), the overall length is 11½”.
- In the middle hole, the overall length is 10”.
- In the top hole, the overall length is 8½”.

6” TRAVEL

For 6” travel of the chuck and drill bit, loosen the thumbscrew. This allows the lower and middle tiers to move up and down.

SHIELD REMOVAL

1. The drill shield portion can be removed from the holder for chuck or drill bit changes. Sharply pull down on the body of the drill shield.
   - Three spring-loaded ball catches hold the shield in position in the holder.
2. To put the shield back into the holder, align the locator pin with the slot in the shield and push up until the ball catches grab and hold.

Replacing Window

See page 4 for instructions on replacing the window of the shield.
SECTION 3—HEAVY-DUTY ALUMINUM DRILL SHIELDS

Shield Installation Instructions

Introduction

These cast aluminum drill shields are furnished with a standard 1 ¾” bore. The holder can be bored up to a maximum diameter of 3 ½” by the user.

The shield is available in 2-tier or 3-tier models and provides protection from 3” to 6” travel of the drill bit. The bottom section(s) of the shield has a clear panel for visibility.

The holder attaches to the machine quill of the drill press. For changing chucks or drill bits, the 2- or 3-tier section can be swung forward and upward out of the way (Photo 3.2). Shields are also available which have a side hinge that swings to the left side.

Installation

1. If the machine quill (nonrotating collar) is larger than 1¾” diameter, bore the holder up to the required diameter (3 ½” maximum). See Figure 3.1. On some drilling machines it may be necessary to raise the stop-gauge casting to expose this quill.

2. When the holder is at the desired size, split the rear of the holder with two saw cuts 3⁄16” apart. The cuts must extend into the precast slot to ensure sufficient clearance for clamping action when tightening the hex bolt. See Figure 3.1.

3. Insert the pivot lug (on holder) into the channel of the body section.

4. Using a hammer, tap the pivot pin into the pivot hole in the body section through the pivot lug.

5. Peen the end of the pivot pin to prevent it from coming out.

6. Using pliers, extend the springs and hook them behind the retaining pins which are positioned midway down the body section. See Figure 3.2.

7. Insert the hex bolt into the rear of the top holder. Attach the top holder to the machine quill. Tighten the bolt to clamp onto the quill.

8. Use the adjusting knob to shorten the stroke of the shield.

Replacing the Polycarbonate Window

The polycarbonate window(s) on the drill shield is replaceable because it will become scratched and opaque from normal wear and tear. For comfortable operator vision, the window should be replaced whenever it becomes cloudy.

1. Tap out the window retaining pin.

2. Slide the used polycarbonate window out and insert the new window.

3. Replace the retaining pin.

REPLACEMENT WINDOW

Part No. DZS-002  Replacement polycarbonate window for all aluminum drill shields. (The 3-tier drill shield has two windows.)
SECTION 3—HEAVY-DUTY ALUMINUM DRILL SHIELDS

Shield Installation Instructions

DIAGRAM AND PARTS LIST

Figure 3.3
Front View

Figure 3.4
Part No. DZS-001 Dimensions

Figure 3.5
Part No. DZS-005 Dimensions

TOP ASSEMBLY KIT

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Hardened Pivot Pin</td>
</tr>
<tr>
<td>6</td>
<td>Extension Springs (2)</td>
</tr>
<tr>
<td>11</td>
<td>Top Carrier</td>
</tr>
<tr>
<td>12</td>
<td>Plunger Pin Assembly</td>
</tr>
<tr>
<td>13</td>
<td>5/16&quot; BSW Hex Bolt</td>
</tr>
</tbody>
</table>

TELESCOPIC SHIELD ASSEMBLY

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<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Body Section</td>
</tr>
<tr>
<td>2</td>
<td>Middle Section</td>
</tr>
<tr>
<td>3</td>
<td>Visor Section</td>
</tr>
<tr>
<td>4</td>
<td>Adjusting Knob Assembly</td>
</tr>
<tr>
<td>7</td>
<td>Hardened Stop Pin</td>
</tr>
<tr>
<td>8</td>
<td>Polycarbonate Window</td>
</tr>
<tr>
<td>9</td>
<td>Spring Retaining Pins (2)</td>
</tr>
<tr>
<td>10</td>
<td>Window Retaining Pin (1)</td>
</tr>
</tbody>
</table>

DRILL SHIELDS

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DZS-001</td>
<td>3-Tier Front Hinge 4 1/2&quot; Min; 10 1/2&quot; Max; 6&quot; Stroke; Max Chuck Dia. 2 1/4&quot;</td>
</tr>
<tr>
<td>DZS-003</td>
<td>2-Tier Front Hinge 4 3/4&quot; Min; 7&quot; Max; 2 1/4&quot; Stroke; Max Chuck Dia. 2 3/4&quot;</td>
</tr>
<tr>
<td>DZS-004</td>
<td>2-Tier Front Hinge 6&quot; Min; 10 1/2&quot; Max; 4 1/4&quot; Stroke; Max Chuck Dia. 2 3/4&quot;</td>
</tr>
<tr>
<td>DZS-005</td>
<td>2-Tier Side Hinge 6&quot; Min; 10 1/2&quot; Max; 4 1/4&quot; Stroke; Max Chuck Dia. 2 3/4&quot;</td>
</tr>
<tr>
<td>DZS-006</td>
<td>3-Tier Side Hinge 4 1/2&quot; Min; 10 1/2&quot; Max; 6&quot; Stroke; Max Chuck Dia. 2 1/4&quot;</td>
</tr>
</tbody>
</table>
SECTION 4—OTHER CONSIDERATIONS
Shield Installation Instructions

Using the Shields
These shields is intended to deflect objects such as chips and coolant. For protection, position the shield between the point of operation and the operator. Make sure the shield will not be hit by normal movements of the table, rotating handles, pieceparts, etc. During loading or setup of workpieces, the shield can be swung out of the way.

Note: Always make sure the shield is installed and maintained in first-class condition to meet the applicable OSHA (Occupational Safety and Health Administration) or ANSI (American National Standards Institute) standards.

Maintenance of the Polycarbonate
The transparent portions of these shields are made of polycarbonate which was selected for its strength and durability under impact. Although it will scratch if mistreated, it can be kept clear with the following appropriate care.

1. Remove coolant, chips, or debris periodically.
2. Using a clean sponge or soft clean cloth, wash with mild soap or detergent and lukewarm water.
3. Rinse well with clean water.
4. Hairline scratches or minor abrasions can be removed or minimized using a mild car polish such as paste wax. A wax coating also makes cleaning easier.

When many shields are used in a plant, spare shields can be kept on hand and exchanged periodically. The shields can be removed from the machines, carefully washed, and exchanged at a later date.

Do Not
rub or wipe with dirty shop towels or scrape with a blade.

Do Not
use gasoline, benzine, acetone, or carbon tetrachloride on the shield.

Do Not
use cleaners or powders that contain abrasives, or “dry rub” abrasive dust to remove coolant, lubricant, and chips.

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