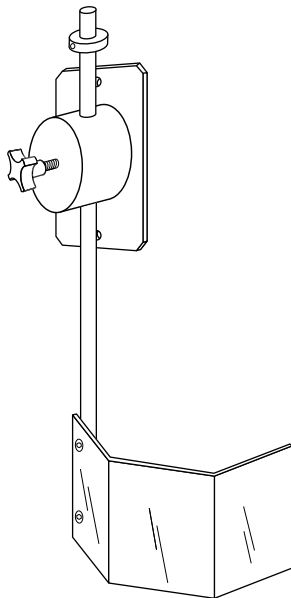


INSTALLATION INSTRUCTIONS FOR DRILL SHIELDS

Safety Chip Shields

Page 2

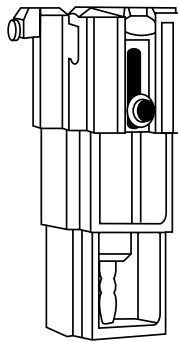
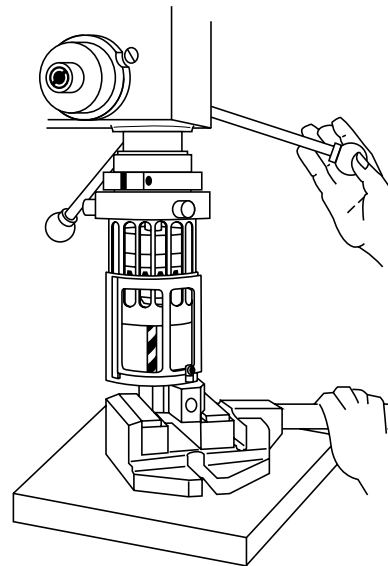
- KYL-001
- KYL-055



Telescoping Drill Shields

Pages 3-5

- DXS-500
- DXS-600
- DXS-700
- DXS-800



Aluminum Drill Shields

Pages 6-7

- DZS-001
- DZS-003
- DZS-004
- DZS-005
- DZS-006

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

Part No.	Description
KYM-001	Polycarbonate Shield Only
KYM-002	Mounting Arm
KYM-003	Magnetic Base and Carrier
FKT-213	Mounting Plate

Figure 1.1
Complete Shield
KYL-001

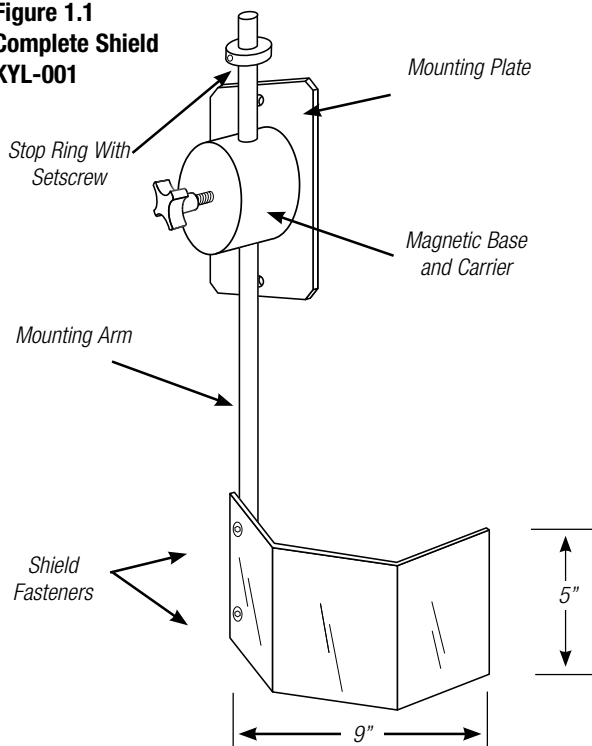


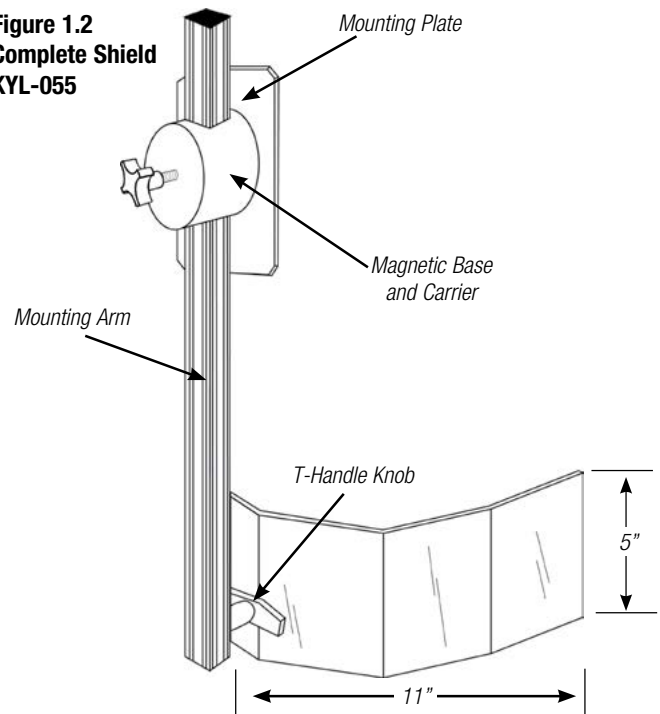
Photo 1.1



REPLACEMENT PARTS FOR KYL-055

Part No.	Description
KYL-044	Polycarbonate Shield Only
FKT-792	Mounting Arm
KYM-069	Magnetic Base and Carrier
FKT-083	T-Handle Knob
FKT-213	Mounting Plate

Figure 1.2
Complete Shield
KYL-055



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 3/4". 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 3/4" diameter. This drill shield fits a circular quill diameter between 2 5/8" and 2 3/4" without the use of an adaptor bushing. If an adaptor bushing is required for smaller quill sizes, see page 4.

Drill Shields

PART NO.	DESCRIPTION
DXS-500	2 3/4" Standard Bore, 2-Tier , 3" stroke, 2 5/8" Min. Quill Diameter
DXS-700	2 3/4" Standard Bore, 3-Tier , 3" or 6" stroke, 2 5/8" Min. Quill Diameter



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

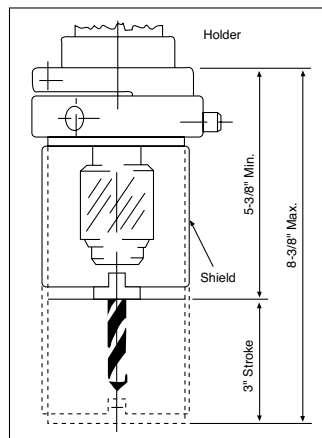
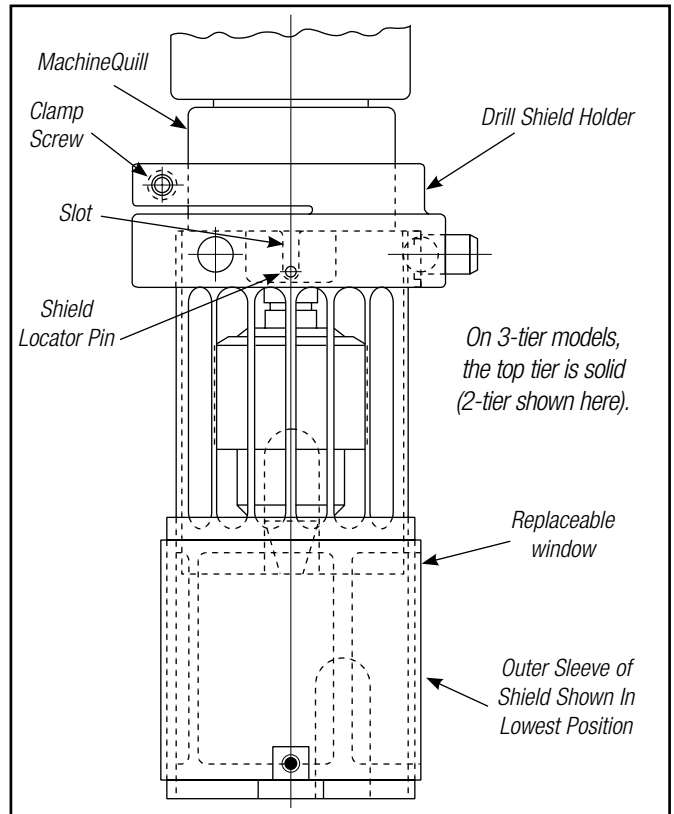


Figure 2.1
Dimensions for
Part No. DXS-500

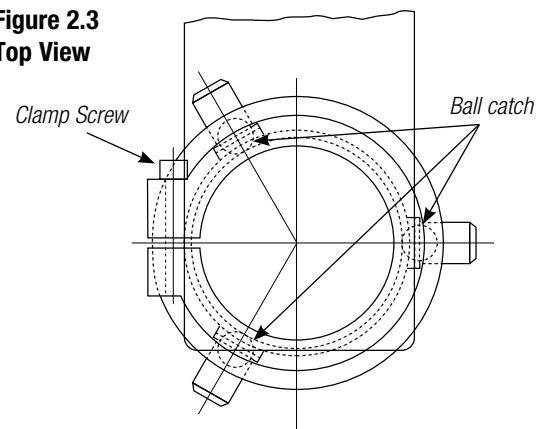
Figure 2.2—Side View



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.

Figure 2.3
Top View



Installation

SHIELD INSTALLATION WITHOUT BUSHING

1. Attach the drill shield holder directly onto the quill with a diameter of 2 5/8" 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.

SECTION 2—TELESCOPING DRILL SHIELDS

Shield Installation Instructions

SHIELD INSTALLATION WITH ADAPTOR BUSHINGS

For smaller quill diameters between 2" and 2 5/8", 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.

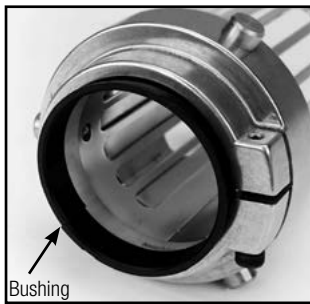


Photo 2.2

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

Figure 2.4

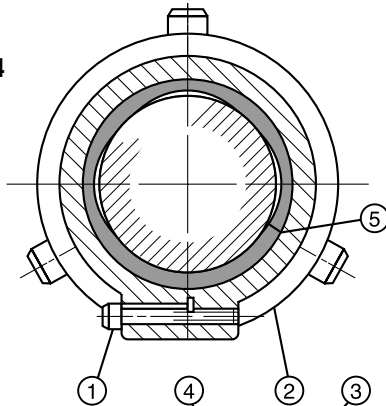


Figure 2.5

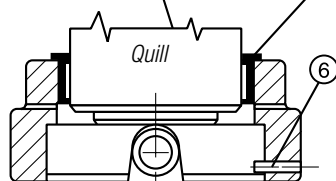


Table 2.1

Part Number	Quill Diameter	
	Inches	Millimeters
Drill Shield Bushing Only		
Standard (No bushing req'd)	2 5/8" to 2 3/4"	66.70 to 69.85
DXS-010	2 1/8" to 2 3/8"	65.10 to 66.68
DXS-015	2 1/2" to 2 5/8"	63.53 to 65.08
DXS-020	2 1/8" to 2 1/2"	61.93 to 63.50
DXS-025	2 3/8" to 2 5/8"	60.35 to 61.90
DXS-030	2 1/8" to 2 3/8"	58.75 to 60.33
DXS-035	2 1/4" to 2 5/8"	57.18 to 58.73
DXS-040	2 3/8" to 2 1/4"	55.58 to 57.15
DXS-045	2 1/8" to 2 3/8"	54.00 to 55.55
DXS-050	2 1/8" to 2 1/2"	52.40 to 53.98
DXS-055	2" to 2 1/8"	50.80 to 52.38

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.

Photo 2.3



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 1/2".

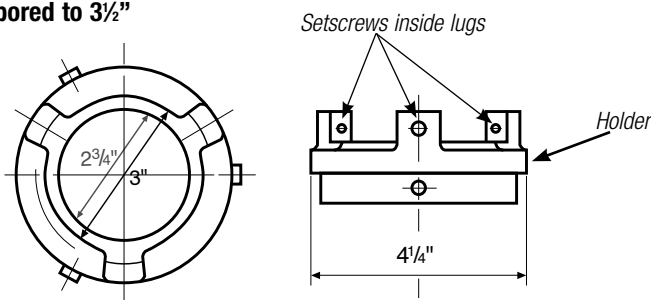
Drill Shields

Part No.	Description
DXS-600	2 3/4" Standard Bore, 2-Tier, Three-Lug Mounting
DXS-800	2 3/4" Standard Bore, 3-Tier, 3" and 6" stroke, Three-Lug Mounting

Installation

1. If the machine quill is larger than 3", bore the holder up to the diameter required (3 1/2" 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.

Figure 2.6
Inside diameter can be bored to 3 1/2"



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.

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 11 1/2".
- In the middle hole, the overall length is 10".
- In the top hole, the overall length is 8 1/2".

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.

Figure 2.7

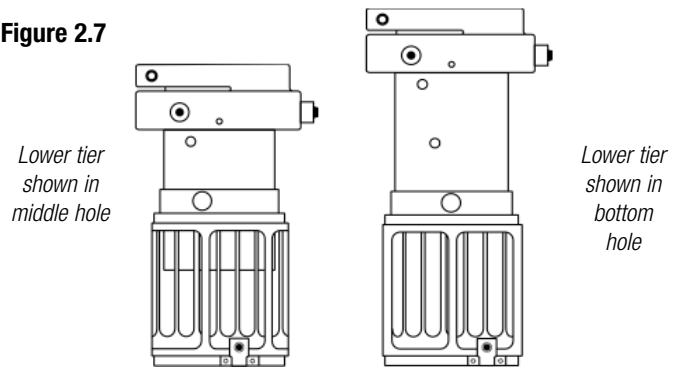
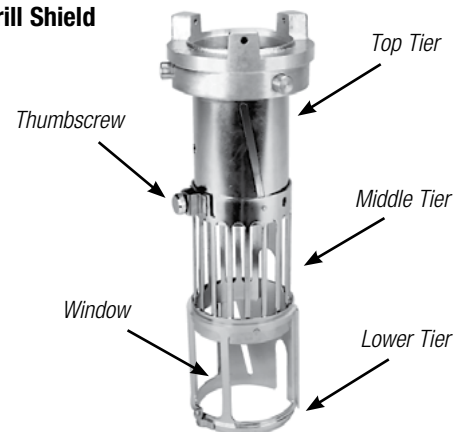


Photo 2.4
Part No. DXS-800
3-Tier Drill Shield



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 3/4" bore. The holder can be bored up to a maximum diameter of 3 1/2" 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.

Photo 3.1

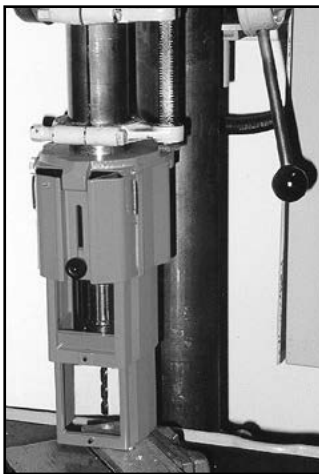
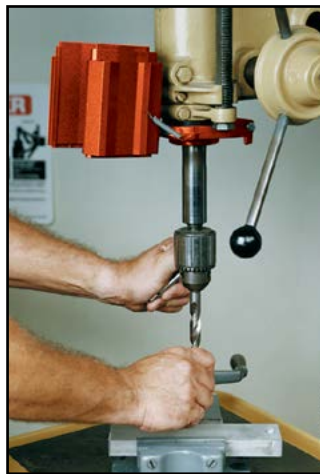


Photo 3.2



Installation

1. If the machine quill (nonrotating collar) is larger than 1 3/4" diameter, bore the holder up to the required diameter (3 1/2" 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.

Figure 3.1
Top View of Holder

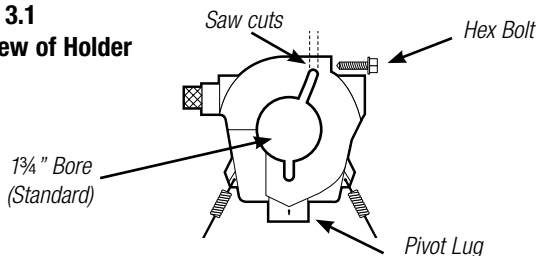
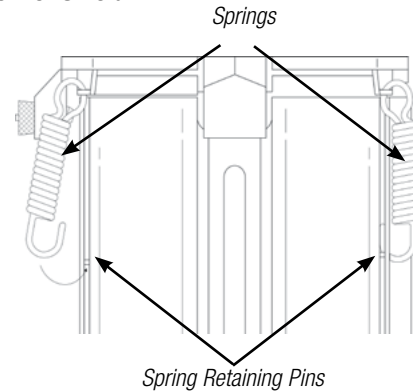


Figure 3.2
Front View of Shield



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

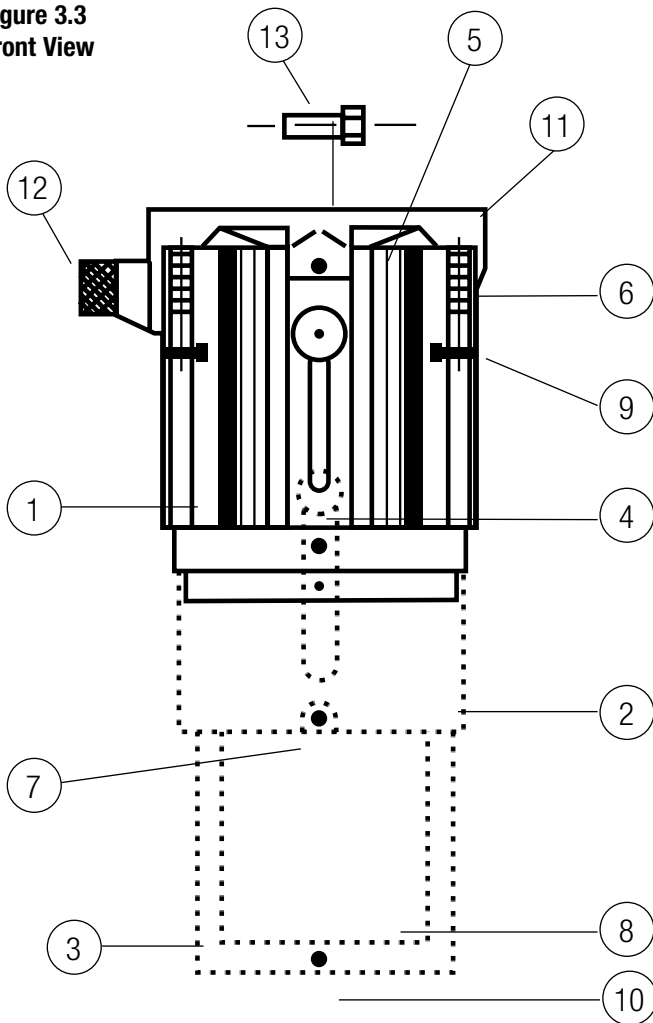
Part No. DZS-002 Replacement polycarbonate window for all aluminum drill shields. (The 3-tier drill shield has two windows.)

SECTION 3—HEAVY-DUTY ALUMINUM DRILL SHIELDS

Shield Installation Instructions

DIAGRAM AND PARTS LIST

Figure 3.3
Front View



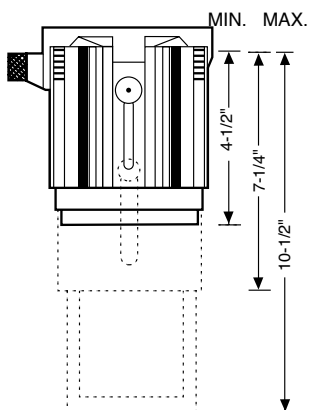
TOP ASSEMBLY KIT

Item No.	Description
5	Hardened Pivot Pin
6	Extension Springs (2)
11	Top Carrier
12	Plunger Pin Assembly
13	1/4" BSW Hex Bolt

TELESCOPIC SHIELD ASSEMBLY

Item No.	Description
1	Body Section
2	Middle Section
3	Visor Section
4	Adjusting Knob Assembly
7	Hardened Stop Pin
8	Polycarbonate Window
9	Spring Retaining Pins (2)
10	Window Retaining Pin (1)

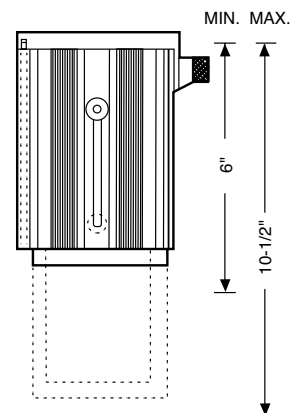
Figure 3.4
Part No. DZS-001 Dimensions



DRILL SHIELDS

Part No.	Description
DZS-001	3-Tier Front Hinge 4 1/2" Min; 10 1/2" Max; 6" Stroke; Max Chuck Dia. 2 1/2"
DZS-003	2-Tier Front Hinge 4 3/16" Min; 7" Max; 2 1/16" Stroke; Max Chuck Dia. 2 3/4"
DZS-004	2-Tier Front Hinge 6" Min; 10 1/2" Max; 4 1/2" Stroke; Max Chuck Dia. 2 3/4"
DZS-005	2-Tier Side Hinge 6" Min; 10 1/2" Max; 4 1/2" Stroke; Max Chuck Dia. 2 3/4"
DZS-006	3-Tier Side Hinge 4 1/2" Min; 10 1/2" Max; 6" Stroke; Max Chuck Dia. 2 1/2"

Figure 3.5
Part No. DZS-005 Dimensions



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, benzene, 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.



When operating any cutting machine (drill press), the operator must be properly trained and must wear proper personal protective equipment such as safety glasses with side shields, safety clothing, and safety shoes. The operator must not wear loose clothing, must not have unrestrained long hair, and must not wear jewelry.

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