

# ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

## ISO RECOMMENDATION

### R 1721

ROCK DRILLING

EXTENSION DRILL-STEEL EQUIPMENT  
FOR PERCUSSIVE LONG-HOLE DRILLING  
REVERSE-BUTTRESS-THREADED EQUIPMENTS

$1\frac{1}{16}$  and  $1\frac{1}{4}$  in (27 and 32 mm)

1st EDITION

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## BRIEF HISTORY

The ISO Recommendation R 1721, *Rock drilling – Extension drill-steel equipment for percussive long-hole drilling – Reverse-buttress-threaded equipments  $1\frac{1}{16}$  and  $1\frac{1}{4}$  (27 and 32 mm)*, was drawn up by Technical Committee ISO/TC 82, *Mining*, the Secretariat of which is held by the Deutscher Normenausschuss (DNA).

Work on this question led to the adoption of Draft ISO Recommendation No. 1721, which was circulated to all the ISO Member Bodes for enquiry in March 1969. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Austria	India	South Africa, Rep. of
Belgium	Iran	Spain
Canada	Israel	Sweden
Czechoslovakia	Italy	Thailand
France	Japan	Turkey
Germany	Netherlands	U.A.R.
Greece	New Zealand	United Kingdom
Hungary	Poland	Yugoslavia

No Member Body opposed the approval of the Draft.

This Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided to accept it as an ISO RECOMMENDATION.

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REVERSE-BUTTRESS-THREADED EQUIPMENTS

$1\frac{1}{16}$  and  $1\frac{1}{4}$  in (27 and 32 mm)

1. SCOPE

This ISO Recommendation specifies the basic dimensions for reverse-buttress-threaded extension drill-steel equipment for percussive long-hole drilling, of the following nominal sizes :

$1\frac{1}{16}$  in light (27 mm)

$1\frac{1}{4}$  in light (32 mm)

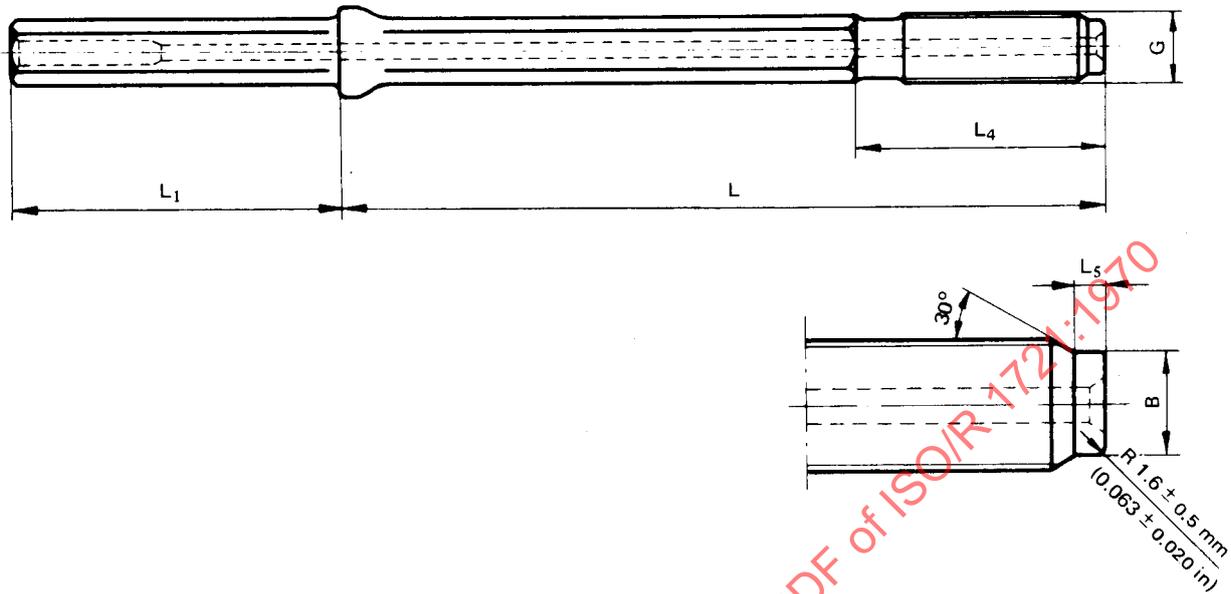
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2. LIST OF COMPONENTS

<b>Equipment</b>	1 $\frac{1}{16}$ in light (27 mm)		1 $\frac{1}{4}$ in light (32 mm)	
<b>Thread diameter</b>	1 $\frac{1}{16}$ in		1 $\frac{1}{4}$ in	
<b>Size of drill rod in bar form</b>	$\frac{7}{8}$ in hexagonal (22 mm)		1 in hexagonal (25 mm)	
<b>Shank adapters hexagon type</b>	See page 5			
<b>Shank adapters lug-shank type</b>	See page 6			
<b>Lengths of extension rods.</b> See page 7	mm	ft	mm	ft
	915	3	915	3
	1220	4	1220	4
	—	—	1525	5
	1830	6	1830	6
	2435	8	2435	8
—	—	3050	10	
<b>Coupling sleeves</b>	See page 8			
<b>Bit diameters (four-wing bits)</b> See page 9	mm	in	mm	in
	41	1 $\frac{5}{8}$	—	—
	45	1 $\frac{3}{4}$	—	—
	—	—	48	1 $\frac{7}{8}$
	51	2	51	2
	—	—	57	2 $\frac{1}{4}$
—	—	64	2 $\frac{1}{2}$	
<b>Reverse-buttress threads</b>	See page 10			
<b>Rod section specification</b>	See page 11			

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3. SHANK ADAPTERS FOR CENTRAL FLUSHING HEXAGON TYPE



Dimensions in millimetres

Equipment	Hexagonal drill steel Nominal size	Thread diameter <i>G</i> nominal	<i>L</i>		<i>L</i> <sub>1</sub>	<i>L</i> <sub>4</sub> ± 1	<i>B</i>		<i>L</i> <sub>5</sub>	
			Basic size	Tolerance			Basic size	Tolerance	Basic size	Tolerance
1 1/16 in light	22	1 1/16 in	255	± 25	108	85.7	22.10	0 -0.2	7.14	± 0.5
1 1/4 in light	25	1 1/4 in	255	± 25	108 159	92.1	25.27	0 -0.2	6.35	± 0.5

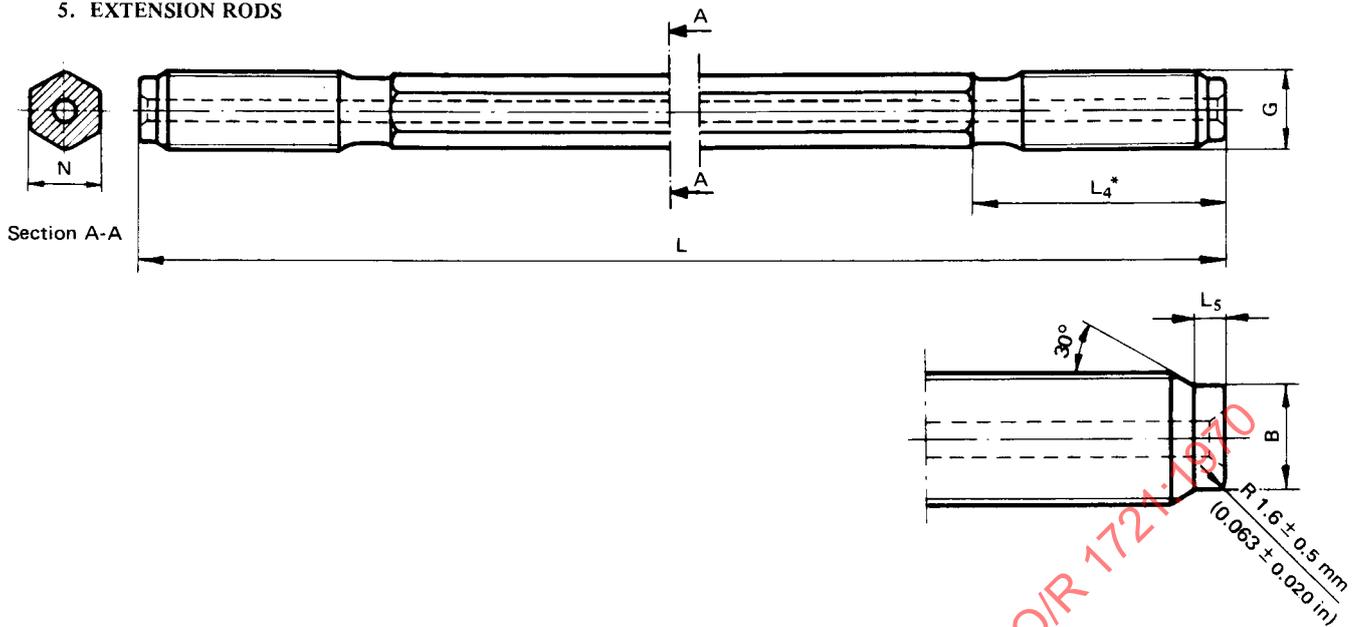
Dimensions in inches

Equipment	Hexagonal drill steel Nominal size	Thread diameter <i>G</i> nominal	<i>L</i>		<i>L</i> <sub>1</sub>	<i>L</i> <sub>4</sub> ± .039	<i>B</i>		<i>L</i> <sub>5</sub>	
			Basic size	Tolerance			Basic size	Tolerance	Basic size	Tolerance
1 1/16 in light	7/8	1 1/16 in	10	± 1	4 1/4	3.375	0.870	0 -0.008	0.281	± 0.020
1 1/4 in light	1	1 1/4 in	10	± 1	4 1/4 6 1/4	3.625	0.955	0 -0.008	0.250	± 0.020

For sizes and tolerances of forged collared shanks, see ISO Recommendation R 723, *Rock drilling – Forged collared shanks and chuck bushings for hollow hexagonal drill steels.*



5. EXTENSION RODS



Dimensions in millimetres

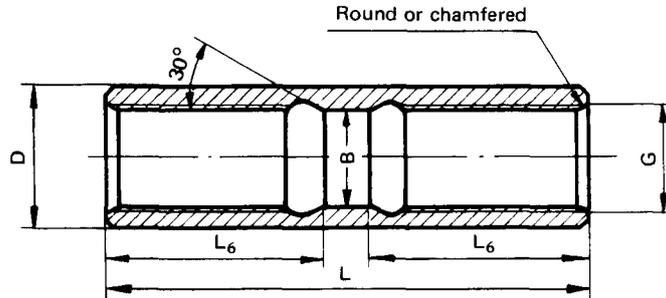
Equipment	Hexagonal drill rod $N$ nominal	Thread diameter $G$ nominal	$L$		$L_4^*$ $\pm 1$	$B$		$L_5$	
			Basic size	Tolerance		Basic size	Tolerance	Basic size	Tolerance
1 1/16 in light	22	1 1/16 in	915	$\pm 25$	85.7	22.10	0 -0.2	7.14	$\pm 0.5$
			1220						
			1830						
			2435						
1 1/4 in light	25	1 1/4 in	915	$\pm 25$	92.1	25.27	0 -0.2	6.35	$\pm 0.5$
			1220						
			1525						
			1830						
			2435						
			3050						

Dimensions in inches

Equipment	Hexagonal drill rod $N$ nominal	Thread diameter $G$ nominal	$L$		$L_4^*$ $\pm 0.039$	$B$		$L_5$	
			Basic size ft	Tolerance in		Basic size	Tolerance	Basic size	Tolerance
1 1/16 in light	7/8	1 1/16 in	3	$\pm 1$	3.375	0.870	0 -0.008	0.281	$\pm 0.020$
			4						
			6						
			8						
1 1/4 in light	1	1 1/4 in	3	$\pm 1$	3.625	0.995	0 -0.008	0.250	$\pm 0.020$
			4						
			5						
			6						
			10						

\* No thread undercut is required in this instance.

6. COUPLING SLEEVES



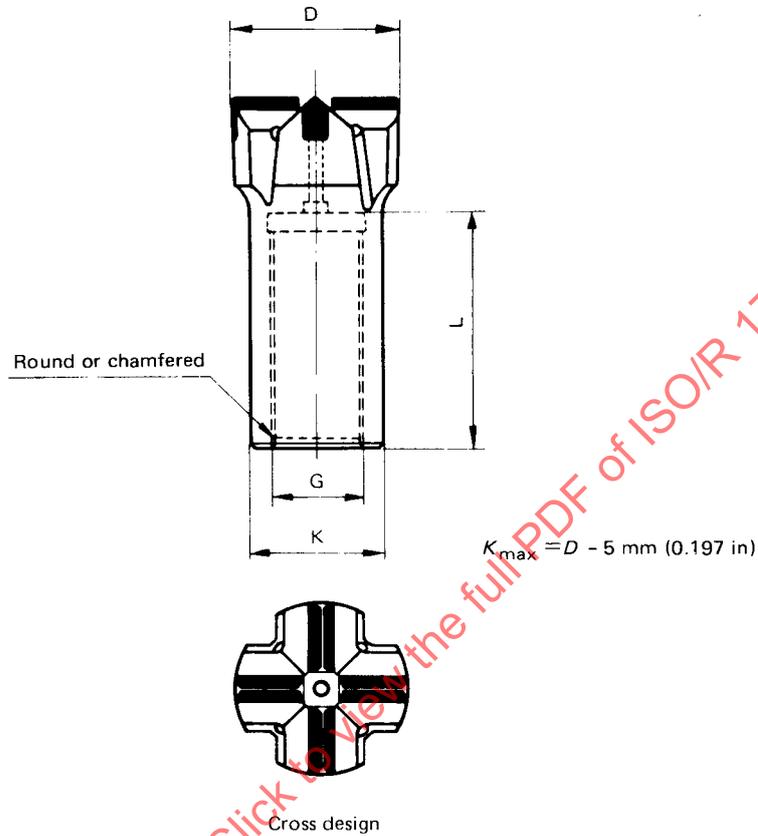
Dimensions in millimetres

Equipment	$L$ - 1	$D$ max.	Thread diameter $G$ nominal	$B$		$L_6$	
				Basic size	Tolerance	Basic size	Tolerance
$1\frac{1}{16}$ in light	127	36.8	$1\frac{1}{16}$ in	22.23	$\begin{matrix} +0.5 \\ 0 \end{matrix}$	57.38	$\begin{matrix} +1.0 \\ 0 \end{matrix}$
$1\frac{1}{4}$ in light	152	45.7	$1\frac{1}{4}$ in	25.53	$\begin{matrix} +0.5 \\ 0 \end{matrix}$	70.87	$\begin{matrix} +1.0 \\ 0 \end{matrix}$

Dimensions in inches

Equipment	$L$ - 0.039	$D$ max.	Thread diameter $G$ nominal	$B$		$L_6$	
				Basic size	Tolerance	Basic size	Tolerance
$1\frac{1}{16}$ in light	5.00	1.45	$1\frac{1}{16}$ in	0.875	$\begin{matrix} +0.020 \\ 0 \end{matrix}$	2.259	$\begin{matrix} +0.039 \\ 0 \end{matrix}$
$1\frac{1}{4}$ in light	6.00	1.80	$1\frac{1}{4}$ in	1.005	$\begin{matrix} +0.020 \\ 0 \end{matrix}$	2.790	$\begin{matrix} +0.039 \\ 0 \end{matrix}$

7. FOUR-WING BITS – CROSS-DESIGN



Equipment	Nominal diameter		Basic size $D$ + 0.3 0 mm (0.012)		Thread diameter $G$ nominal in	$L$ max.	
	mm	in	mm	in		mm	in
$1\frac{1}{16}$ in light	41	$1\frac{5}{8}$	41.28	1.625	$1\frac{1}{16}$	76.2	3.000
	45	$1\frac{3}{4}$	44.45	1.750			
	51	2	50.80	2.000			
$1\frac{1}{4}$ in light	48	$1\frac{7}{8}$	47.62	1.875	$1\frac{1}{4}$	76.2	3.000
	51	2	50.80	2.000			
	57	$2\frac{1}{4}$	57.15	2.250			
	64	$2\frac{1}{2}$	63.50	2.500			