CLEVELAND

Grooving Tools

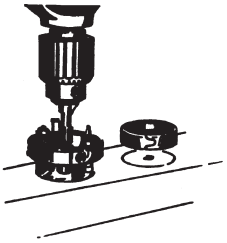
Used to cut grooves for Timber Rings, high speed steel blades, depth gage and pilot to fit in bolt hole. May be used in 3/4" portable drill or drill press. Blades may be resharpened per instructions packed with tool.

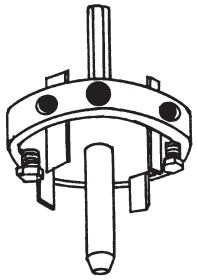
Mfg. No.	Drilled Ring Size	Hole Size
TOOL 301	TR2.5	9/16" dia.
TOOL 302	TR4	13/16" dia.

Includes pilot and blades.

Extra Blades - Pilots

Blade 301, set of 4 for Tool 301
Blade 302, set of 6 for Tool 302
PILOT 562 9/16" Pilot for 1/2" bolt
PILOT 813 13/16" Pilot for 3/4" bolt
PILOT 938 15/16" Pilot for 7/8" bolt





Tool 301

Dapping Tools

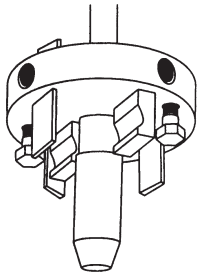
Tools are designed with several blades and cutters to produce a dap of the same shape as the shear plate. Insert the pilot in a predrilled hole or a drill bit may be used to drill and dap.

Mfg. No.	Shear Plate	Drilled Hole Size
TOOL 303	SP2.6	13/16" dia.
TOOL 304	SP4	13/16" dia.
TOOL 304S	SP4S	15/16" dia.

Includes pilot and blades.

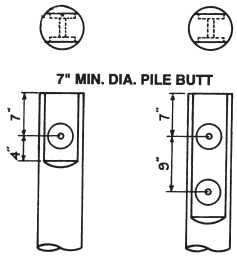
Extra Blades - Pilots

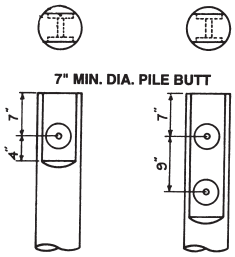
PILOT 813 13/16" Pilot for 3/4" bolt
PILOT 938 15/16" Pilot for 7/8" bolt
Blade 303, set of 4 for Tool 303
Blade 304, set of 5 for Tool 304



Tool 303

Shear Plate Design Suggestions





Uplift

Shear Plate Design Loads (7/8Ø Bolt)

2 Shear Plates	4 Shear Plates (Vertical)	4 Shear Plates (Transverse)	8 Shear Plates
Group “B” Wet Use 7,716 lbs.	Group “B” Wet Use 15,432 lbs.	Group “B” Wet Use 15,432 lbs.	Group “B” Wet Use 30,864 lbs.
Group “C” Wet Use 6,430 lbs.	Group “C” Wet Use 12,860 lbs.	Group “C” Wet Use 12,860 lbs.	Group “C” Wet Use 25,720 lbs.
Group “B” Dry Use 9,214 lbs.	Group “B” Dry Use 18,428 lbs.	Group “B” Dry Use 18,428 lbs.	Group “B” Dry Use 36,856 lbs.
Group “C” Dry Use 7,678 lbs.	Group “C” Dry Use 15,356 lbs.	Group “C” Dry Use 15,356 lbs.	Group “C” Dry Use 30,712 lbs.

DESIGN NOTES:

1. Tabular values are intended as a guide, and should be checked by the design engineer for conformance with current edition of N.D.S.*
2. A 33-1/3% Duration of Load increase is included.
3. Typical Group “B” species include Douglas Fir-Larch and Southern Yellow Pine.
4. Typical Group “C” species include Hem-Fir and Spruce-Pine-Fir.
5. Applicable load adjustment factors are : Load Duration, Wet Service, Temperature, Group Action, Geometry, Penetration and Metal Side Plates.
6. Shear plates are 4" diameter, SP4S.
7. Slab cuts should be parallel, plumb, and a minimum of 5-1/2" in width.
8. Shear plate daps to be made with tool 304S.

***“National Design Specification for Wood Construction” published by American Forest & Paper Association, Washington, D.C.**