Section 9
Services, Assembly Tips & Tools

Processing Services

Description	Unit	Part #
Saw cut up to 80x40mm or 3" x 1.5" size profiles	per cut	19-001
Saw cut up to 80x80mm or 3" x 3" size profiles	per cut	19-002
Saw cut, 160x28 thru 160x80 or 6" x 1.5" profiles	per cut	19-003
Drill and Counter Bore for BHCS or SHCS	each	19-004
Drill and Counter Sink for FHCS	each	19-006
Saw cut for Linear Shafts	each	19-007
Tap Profile End 5/16-18	each	19-009
Tap Profile End M8	each	19-010
Drill 7mm (0.277") Access Hole	each	19-011
Drill & Tap for M5, M6, M8, M10, #10-32, 1/4-20, 5/16-18, 3/8-16	each	19-012
Drill & Tap for M3 or M4	each	19-013
Drill and Tap M12, M16, 1/2-13, or 5/8-18	each	19-014
Step Drill for Universal Fastener (all profiles)	each	19-015
Drill and Tap M8 (5/16-18 x 1.5") for Knuckle Foot	each	19-016
Drill and Tap M10 (3/8-16 x 2") for Knuckle Foot	each	19-017
Service for dowel (securing Linear Shaft)	each	19-019
Drill 22.5mm hole for 1/4-turn Handle	each	19-018
Drill 20mmx6mm (3/4" x 1/4") for Pneu. Universal Fastener	each	19-020
Drill 0.375" or 0.500" hole for Ball Plunger	each	19-022
Drill Through Hole for Side Mounting Knuckle Foot	each	19-023
Drill 7mm (0.277") Access Hole through 160mm (6") side	each	19-025
Panel – Packaging for secure transport	1 package	19-026
Panel – Drill thru panel up to 10mm (3/8") for screws	each	19-027
Panel – Chamfer Corner	each	19-029
Panel – Notch Corner	each	19-030
Panel – Special Service Cut	each	19-031
Panel – Cut to Size	each	19-032
Mill Square up to 80x40 (3" x 1.5")	per end	19-100
Mill Square up to 80x80 (3" x 3")	per end	19-101
Mill Square up to 160x80 (6" x 1.5")	per end	19-102
Drill/Tap/Mill for Roller PA	each	19-103
Special Miter Cut	per cut	19-104
45° Miter Cut up to 80x80 (3" x 3")	per cut	19-105
45° Miter Cut, 6" x 1.5" Profile	per cut	19-106
Miter Connection Counter Bore	each	19-211
Drill hole 8.4mm for Slide Block Brake	each	19-140

Saw Profile to Length

A cut to length extrusion profile can be ordered by specifying this machining service.

Tolerances: Length = ±.04 mm (±0.015 in)
Squareness = ±.004 cm/cm (±0.003 in/in)

Maximum Length*: 6000 mm (240 in) for all profiles, except as noted otherwise

Ordering Note:

Saw cut requirements should be described by specifying the machining service number and length of cut required, in milliimeters or inches.

Example:

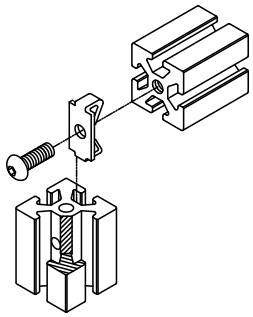
A project requires 4 pieces of the 80 x 80 profile, saw cut to a length of 1500 mm each. These profiles would be ordered as follows:

Line 1 – Specify the total quantity required:
Part No. = 10-088, Quantity = 4@1500mm

Line 2 – Specify machining services required:
Machining Service No. = 19-002
Quantity = 4

Tap Profile End

This machining service provides one or more tapped holes (M8, M10 or 5/16-18) at the end of an extrusion profile.



Ordering Note:

Profile end tapping requirements should be described by specifying the machining service number and the end(s) at which the tapped hole is required. See pages 233-234 for locator drawings of the extrusion ends.

Example:

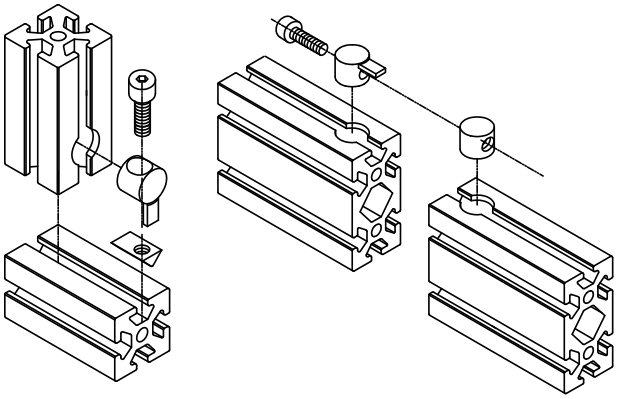
A length of 11-040 profile requires tapping at each end for attachment of the M8 End Fastener Assembly. This machining service would be ordered as follows:

Machining Service No. = 19-010@A1, 19-010@A2

In this example, there would be charges for two profile end tapping services:
19-010, Quantity = 2

Step Drill

This service provides one or more blind holes on the profile T-slot. These holes can accommodate the Universal or Butt Fasteners for both metric or inch extrusions.



Ordering Note:

Profile step drill requirements should be described by specifying the machining service number and the end(s) at which the drill is required. See pages 233-234 for locator drawings of the extrusion ends.

Example:

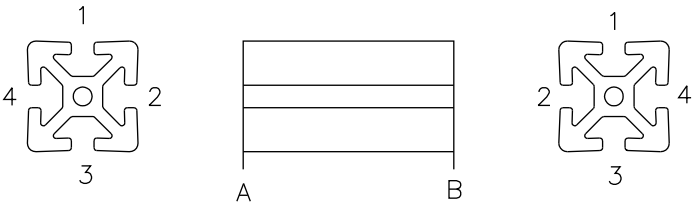
Two lengths of 11-080 profile require Butt Fasteners to connect to each other. This machining service would be ordered as follows:

Machining Service No. = 19-015@A3, A6
19-015@B3, B6

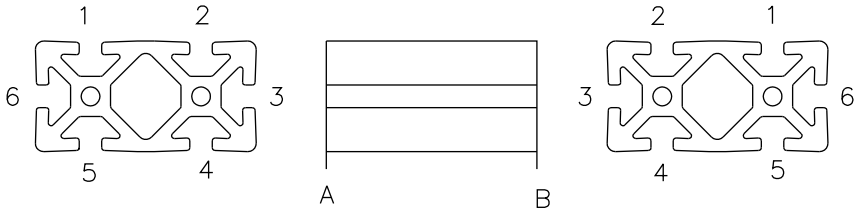
In this example, there would be charges for step drill services:
19-015, Quantity = 4

Surface Locations

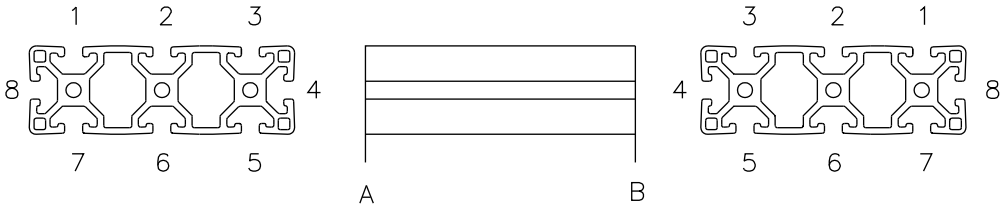
28 x 28 Profiles
40 x 40 Profiles



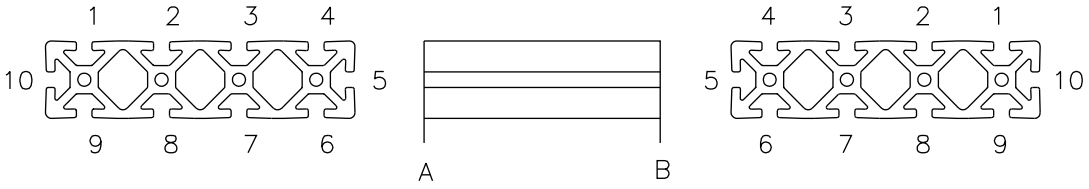
28 x 56 Profiles
40 x 80 Profiles



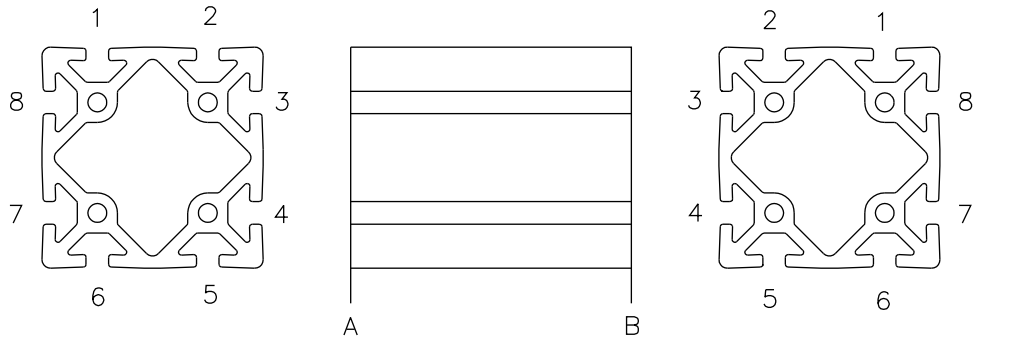
40 x 120 Profiles



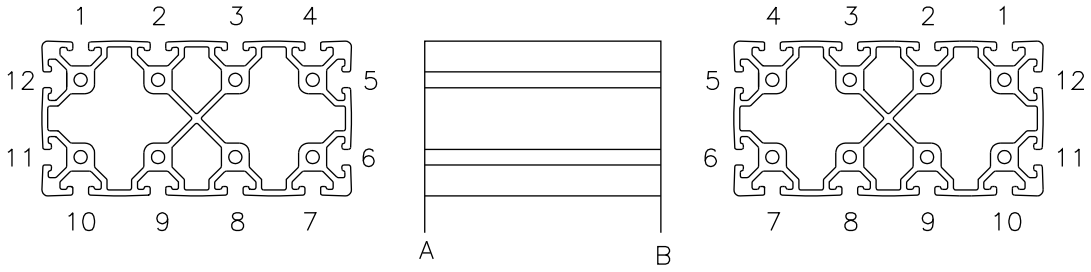
40 x 160 Profiles



56 x 56 Profiles
80 x 80 Profiles

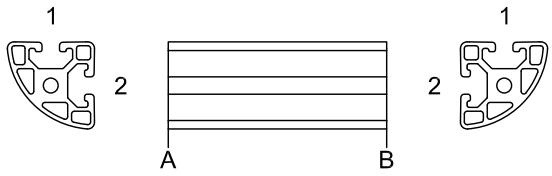


80 x 160 Profiles

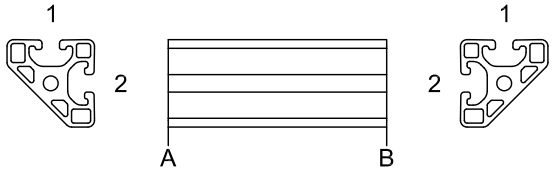


Surface Locations

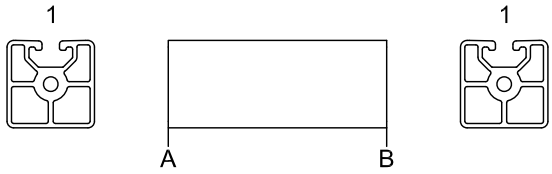
Quarter Round Profile



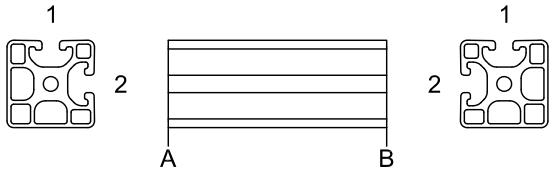
45° Angled Profile



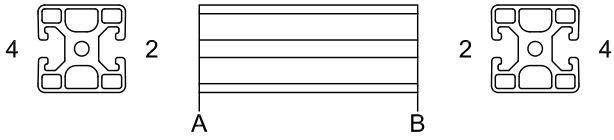
Mono Slot Profile



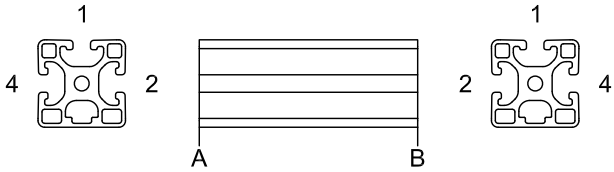
Bi-Slot Corner Profile



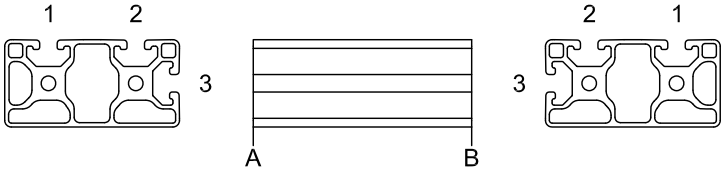
Bi-Slot Mid-Frame Profile



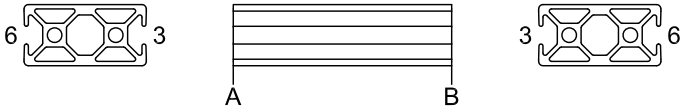
Tri-Slot Profile



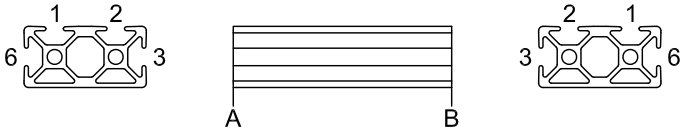
Tri-Slot Corner Profile
80x40



Bi-Slot Mid-Frame Profile
28x56



Quad-Slot Profile
28x56



Parker Hannifin Corporation
Industrial Profile Systems
Wadsworth, Ohio USA

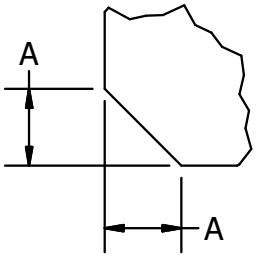
Chamfer Corner for End Fastener Clearance

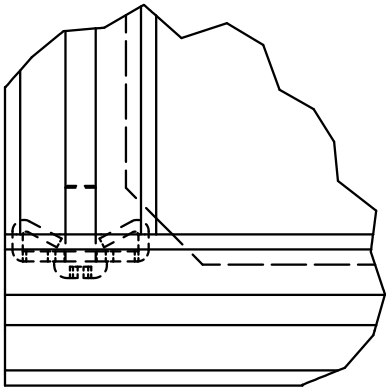
Chamfer gives clearance for end fastener. This service is needed only when panels are installed in T-slots. Profiles 20 and 1" use 3mm thick panel with 3mm panel gasket.

Service 19-029

Dimensions

Profile	A
40	10.2 (0.400")
30	10.2 (0.400")
28	6.40 (0.250")
20	6.40 (0.250")
1.5"	10.2 (0.400")
1"	8.2 (0.325")





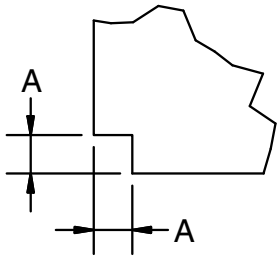
Notch Corner for Extrusion Clearance

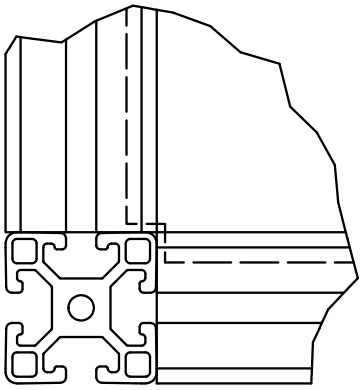
Notch gives clearance for perpendicularly mounted extrusions. This service is needed only when panels are installed in T-slots. Profiles 20 and 1" use 3mm thick panel with 3mm panel gasket.

Service 19-030

Dimensions

Profile	A
40	10.2 (0.400")
30	10.2 (0.400")
28	6.40 (0.250")
20	6.40 (0.250")
1.5"	10.2 (0.400")
1"	8.2 (0.325")





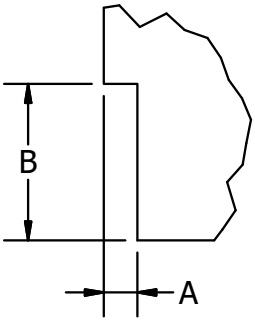
Notch Corner for Anchor Fastener Clearance

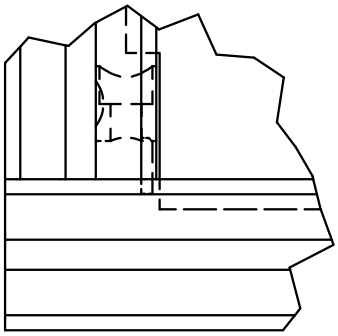
Notch gives clearance for anchor fastener. This service is needed only when panels are installed in T-slots. Profiles 1" use 3mm thick panel with 3mm panel gasket.

Service 19-031

Dimensions

Profile	A	B
40	12.7 (0.500")	44.50 (1.750")
30	12.7 (0.500")	44.50 (1.750")
28	8.90 (0.350")	41.40 (1.630")
1.5"	12.7 (0.500")	44.50 (1.750")
1"	8.20 (0.325")	25.40 (1.000")

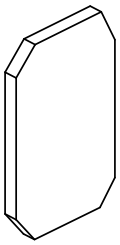




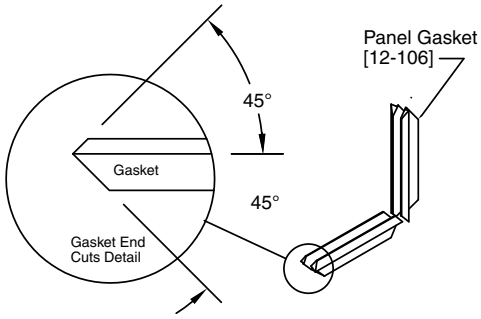
Pre-Assembly Instructions and Tips

1. Upon receipt of your order, check to see that you have received a complete kit with numbered components. All extrusions are clearly marked with a number designation. Sort all the extrusions according to these designations. If a drawing was supplied, these numbers will correspond with the numbers shown on the drawing and also with those on the bill of materials.
2. Assembly should be performed on a flat surface as this helps insure proper alignment and perpendicularity of the frame.
3. Thread all end fasteners into tapped ends of extrusions but do not tighten the bolts.
4. Pre-assemble all joiner plates, gussets, brackets, wire mesh clamps and anchor fastener assemblies but do not tighten the bolts.
5. If economy T-nuts are being used on joiner plates, gussets, brackets and any accessories which are to be mounted between end fastenings of the main assembly, then these systems of the T-nut should be installed in the proper T-slot at this time.
6. Install all wheels, leveling feet, hinges, handles and end caps after the main frame is constructed.
7. If solid panels are part of the installation, they should be installed in the T-slot after three sides of its frame have been formed. If panel gasket [12-106] is being used, it should be wrapped around the panel, notched at each corner and then slid into the extrusion's "u-shaped" frame.
8. Use a rubber mallet when installing panels and tap panels evenly to insure that they seat to depth within the T-slot.

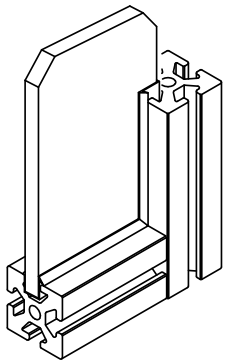
Panel and Gasket Cutting and Installation



Cut chamfers at panel corners that are adjacent to standard fasteners. Chamfer should be at 45° angle (approx.) and should be cut according to detail on page 235.



Measure the length of each side of the panel and cut the gasket to those lengths. Then cut each end of the gasket as shown above. Two 45° angle cuts will insure proper fit. Then slide the cut gasketing onto the side of the panel.



With the gasketing mounted on the panel, insert the panel into the slot of the extrusion. By loosening the standard fasteners that hold the extrusions together, the panel will be allowed to slide more freely into place. Gently tapping the extrusion into place and tightening the extrusions back together will insure a tight fitting panel.

Drilling Jigs Std. Connection

Application

For precise location of 7mm access hole for standard connections.

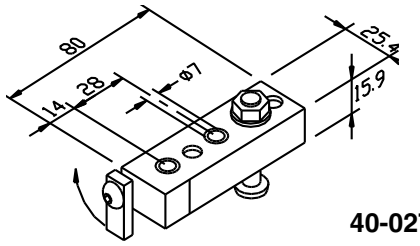
Technical Data

Al, anodized

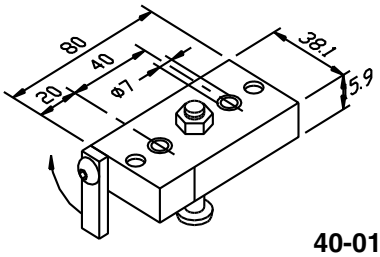
Ground and hardened drill bushings with locations 28, 30 and 40mm between access holes. Clamping "T" bolt for firm attachment.

Ordering Information

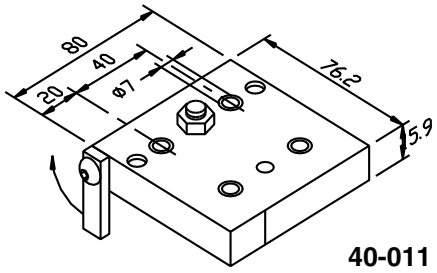
Description	Unit	Weight	Part #
Drilling Jig 40, Std. Connection	1 pc	0.19 kg	40-010
Drilling Jig 80, Std. Connection	1 pc	0.36 kg	40-011
Drilling Jig 28, Std. Connection	1 pc	0.12 kg	40-027
Drilling Jig 30, Std. Connection	1 pc		40-030



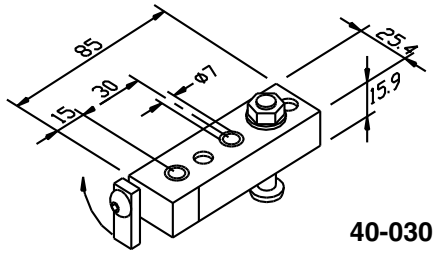
40-027



40-010

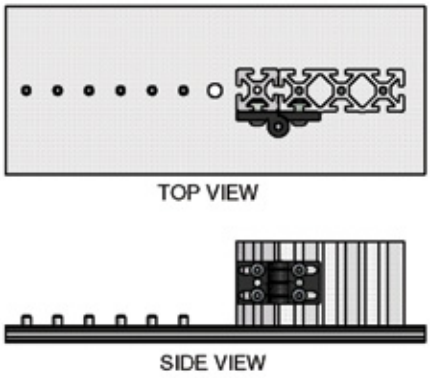


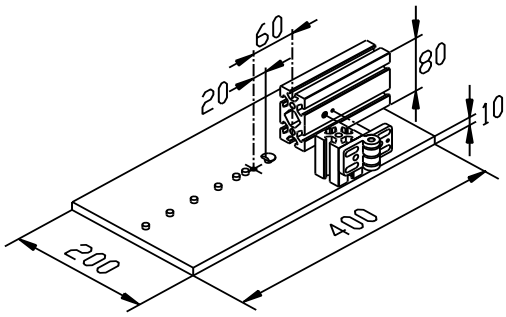
40-011



40-030

Drilling Jig Universal Connection





40-015

Application

For precise location of 20mm dia. step bore for the universal connection, and the 7mm access hole for the standard connection on a drill press.

Technical Data

Plastic base plate

Al, anodized stop block

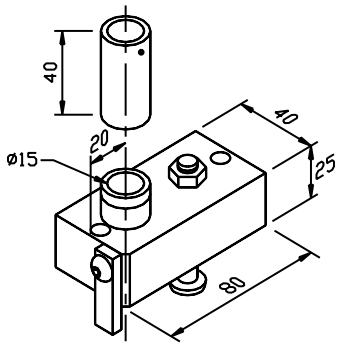
Zn cast, black hinge

Ordering Information

Description	Unit	Weight	Part #
Drilling Jig 40, Univ. Connection	1 pc	2.35 kg	40-015

Parker Hannifin Corporation
Industrial Profile Systems
Wadsworth, Ohio USA

Drilling Jig Clamp Profile 40x40



40-026

Application

For precise location clearance hole and counter bore for M8 or 5/16-18" BHCS or SHCS on Clamp Profile 40x40.

Technical Data

Al, anodized

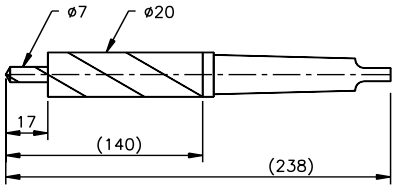
Drill bushing hardened and polished.

Includes depth limit for step drill (40-025).

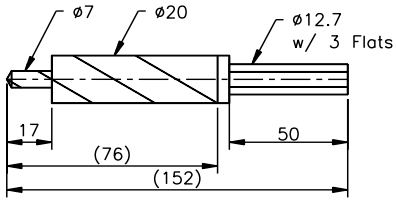
Ordering Information

Description	Unit	Weight	Part #
Drilling Jig, Clamp Profile 40x40	1 pc	0.49 kg	40-026

Step Drill 7x20 Univ. Connection



40-023



40-024

Application

Used for drilling 20 mm diameter step bore for universal or butt fastener with 40, 30 or 28 series profiles.

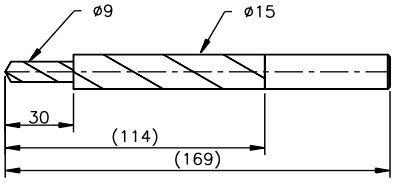
Technical Data

High performance, high speed steel, nitrated. #2 Morse Taper or 0.5" dia. with three flats.

Ordering Information

Description	Unit	Weight	Part #
Step Drill 7x20, #2 Morse Taper	1 pc	0.26 kg	40-023
Step Drill 7x20 with 3 Flats	1 pc	0.19 kg	40-024

Step Drill 9x15



40-025

Application

Used for drilling and counter boring profile for M8 or 5/16-18" BHCS or SHCS.

Technical Data

High performance, high speed steel, nitrated. Straight shank.

Ordering Information

Description	Unit	Weight	Part #
Step Drill 9x15	1 pc	0.15 kg	40-025

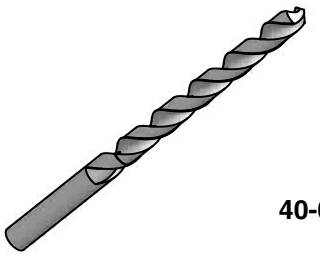
6.8mm Drill Bit

Application
Tap drill size for M8x1.25 and drill size for standard fastener access hole.

Technical Data
6.8mm drill, right hand, jobbers length
High speed steel

Ordering Information

Description	Unit	Weight	Part #
6.8mm Drill Bit	1 pc	20 g	40-018



40-018

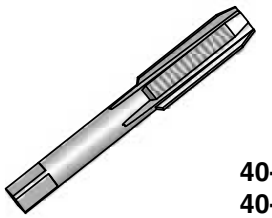
Tap

Application
Tooling to provide M8 tap in profile face holes for standard fastening set.

Technical Data
M8x1.25 tap, right hand
High speed steel

Ordering Information

Description	Unit	Weight	Part #
M8x1.25 Tap	1 pc	25 g	40-016
5/16-18 Tap	1 Pc	25 g	40-516



40-016
40-516

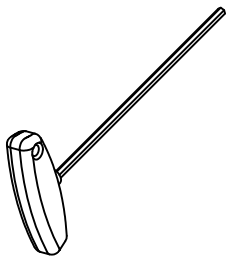
T-Handle Wrench

Application
For tightening of standard and universal connections.

Technical Data
Chrome vanadium steel, nickel plated
Acetate handle

Ordering Information

Description	Unit	Weight	Part #
Hex 5 Wrench with T-Handle	1 pc	26 g	40-012
3/16" Wrench with T-Handle	1 pc	26 g	40-044
1/4" Wrench with T-Handle	1 pc	26 g	40-046



40-012
40-044
40-046

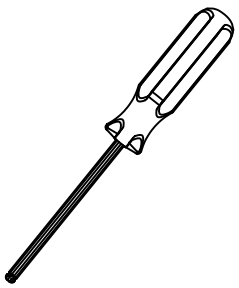
Ball-Headed Wrench

Application
For tightening of standard and universal connections.

Technical Data
Chrome vanadium steel, nickel plated
Plastic handle

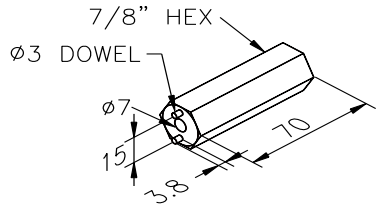
Ordering Information

Description	Unit	Weight	Part #
5mm Wrench with Ball Head	1 pc	50 g	40-013
6mm Wrench with Ball Head	1 pc	50 g	40-022
3/16" Wrench with Ball Head	1 pc	50 g	40-047
1/4" Wrench with Ball Head	1 pc	50 g	40-048



40-013
40-022
40-047
40-048

Spanner Wrenches



40-029

40-017

40-032-14

40-032-25

Application

Designed for tightening spanner nuts on linear guide systems 14 and 25.

Technical Data

St, black or brown finish tempered with spot welded pins

40-029: Al, black anodized

Steel pins

Description	Unit	Weight	Part #
Adj. Spanner Wrench for Linear 14	1 pc	0.11 kg	40-017
Pin Socket Wrench	1 pc	0.08 kg	40-029
Spanner Wrench for Linear 14	1 pc	0.04 kg	40-032-14
Spanner Wrench for Linear 25	1 pc	0.10 kg	40-032-25