

Q U A D R E X[®]

FASTENERS / DRIVERS

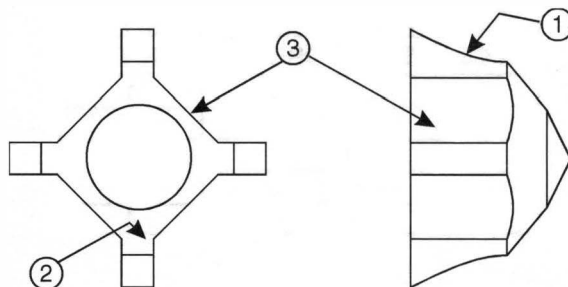


WHAT IS QUADREX?

Quadrex® is *not* a Phillips/square combination, but an engineered recess design that improves the features of the square drive, allows servicing with a Phillips or square driver, and offers superior driving performance with Quadrex drivers.

Quadrex is an established drive system in the U.S., Canada, and Europe utilized in industries such as appliance, automotive, electrical, furniture, construction, and many others. Because of its simple configuration and wide range of capabilities, Quadrex is being introduced into new applications every day.

The design characteristics that make Quadrex so unique are:



- (1) The radial end walls of the recess wings, which provide an optimal penetration depth for a Phillips driver without compromising head strength or service performance;
- (2) The open corners of the square portion of the recess, that improve driver penetration and eliminate any sharp corners that encourage stress cracks during the fastener head forming stage; and
- (3) The vertical recess side walls, which improve total by engagement and increase overall recess strength.

WHY IS QUADREX THE RECESS OF CHOICE? _____

There are four major factors that contribute to defining what a quality recess should offer:

- Flexibility of design
- Compatibility with high production assembly
- Consistent products and reliability
- Availability of drive system

- (I) **FLEXIBILITY OF DESIGN** — In general, the Quadrex® recess is manufactured in 5 sizes. Table (1) lists the comparable square drive size and proper Phillips service driver accepted by each Quadrex size:

QUADREX RECESS SIZE	SQUARE DRIVER	PHILLIPS DRIVER
#0	0	1
#1	1	2
#2	2	2
#3	3	3
#4	4	4

TABLE (1)

Within each Quadrex size, there is a range of standard recess depths available to the product designer. This provides the designer with the flexibility to easily applicate Quadrex into various fastener head styles regardless of head configuration thus helping streamline product development. For simplification, standard recess depths are produced in terms of their comparable square depths. They are coded and displayed in Table (2) along with the square depth ranges they respectively fall into:

QUADREX RECESS SIZE					
SQUARE DEPTH (in.)	#0	#1	#2	#3	#4
.024 - .030	Q-01				
.030 - .040	Q-02	Q-11	Q-21		
.040 - .050	Q-03	Q-12	Q-22		
.050 - .060		Q-13	Q-23		
.060 - .070		Q-14	Q-24		
.070 - .080		Q-15	Q-25, Q-26	Q-31	
.080 - .090			Q-27	Q-32	
.090 - .100			Q-28	Q-33	Q-41
.100 - .110				Q-34	Q-42
.110 - .120				Q-35	Q-43
.120 - .140				Q-36	Q-44

TABLE (2)

From Table (2), we see that the depth ranges overlap and are common to more than one recess size. This gives the added option of choosing a larger recess size for the same head style without severely affecting fastener head strength. This is further demonstrated in Table (3), which matches recommended Quadrex® recess sizes with various screw sizes and head configurations:

HEAD STYLE AND THREAD SIZE								
QUADREX RECESS SIZE	FLAT HEAD	FLAT HEAD WOOD SCW	OVAL HEAD	PAN HEAD	TRUSS HEAD	FILLISTER HEAD	ROUND HEAD	ROUND WASHER HD
#0	4	4	4	4	4	4,5	4	4
#1	5,6,7	5,6,7	5,6	5,6,7	5,6,7	6,7,8	5,6	5,6
#2	7,8,9,10	6,7,8,9,10	6,7,8,9,10	6,7,8,10	6,7,8,10	10	7,8,10	6,7,8,10
#3	12,1/4	12,14,16	12,1/4	12,1/4	12,1/4	12,1/4,5/16	12,1/4,5/16	12,1/4,5/16
#4	5/16,3/8	18,20	5/16,3/8	5/16,3/8	5/16,3/8	3/8	—	—

TABLE (3)

- (II) **COMPATIBILITY WITH HIGH PRODUCTION ASSEMBLY** — In the world of large volume manufacturing, it is crucial that a drive system exhibit a considerable level of reliability due to the brief time windows allowed for multiple installations. Delays caused by chronic recess failures can have a major ripple effect on the efficiency of the whole production line. In most instances, fasteners must be installed as the assembly is in constant motion past the worker. This places more pressure on the operator to be as efficient as possible from a relatively fixed position on the line. Compounding this problem is the fact that not all fastener installation points are accessible enough to allow optimal (axial) driving.

Given these circumstances, the two main characteristics that a manufacturer should look for in a production line drive system are:

- (1) Ability to transmit sufficient torque to the fastener (axially or off-angle driving) until the required clampload is achieved,
- (2) A recess which minimizes time and resources dedicated to assembly and at the same time can substantially decrease immediate assembly costs and long-term overall manufacturing costs.

Engineering Services

Design & Technical Assistance
VA/VE Project Support
Product Engineering Samples
Training Programs
On-Site Technical Support
Application Testing
Product Teardowns



Value Added Services

Technical Sales Team
Focused Manufacturing & Logistics Facilities
Integrated Supply Base
Sourcing Solutions
Customized Labeling and Packaging
EDI Capable
Global Partnerships - North America,
Europe & Asia

Certifications & Accreditations



NSF-ISR

Registered to
IATF 16949



ACCREDITED

Testing Lab

Cert #0794.01

ALtracs® Plus is a registered trademark of EJOT Verbindungstechnik GmbH & Co. KG.



900 North Church Road, Elmhurst, IL 60126

800-323-1736 | 630-833-2880

www.semblex.com