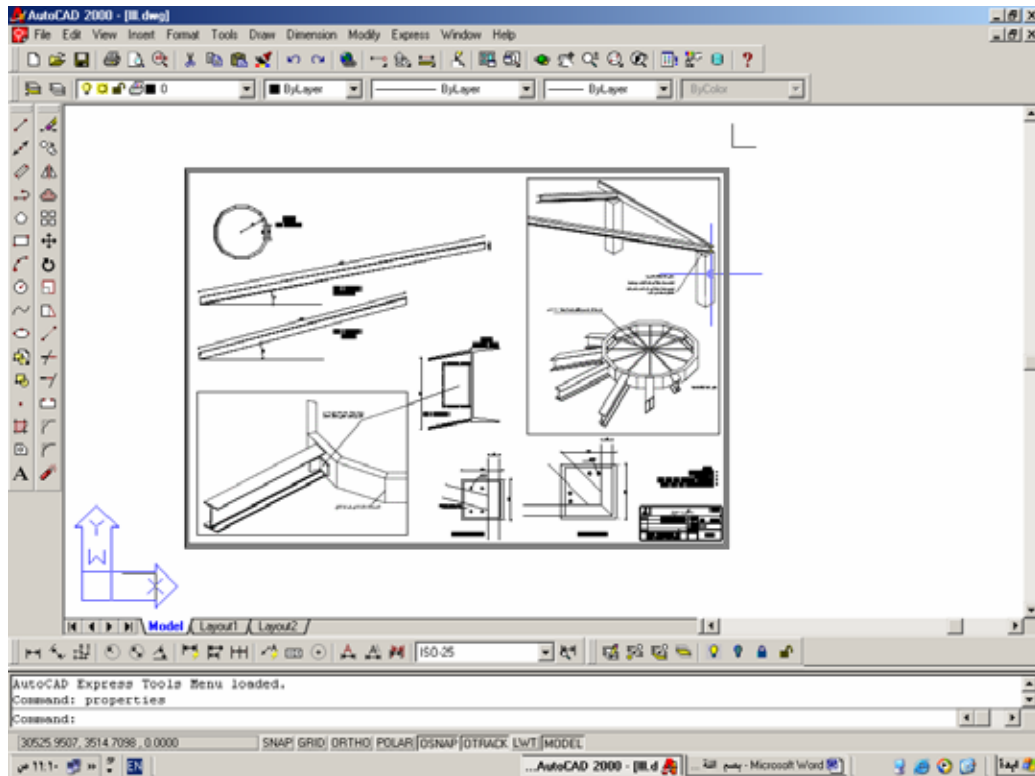


١- مدخل إلى اتوكاد ٢٠٠٠

— — :

:



شكل رقم ١-١

:

View
INSERT
TOOLS
MODIFY
WINDOW
HELP

File
EDIT
FORMAT
DRAW
DIMENSION
EXPRESS

— — — —)

(.....

2...

.....

.) :

..... - - -
:

- -

(L) LINE : ()

ENTER

. DRAW \Rightarrow LINE :

.

.

- -

.

:

- -

.

:

()

.

:

x,y

x , y , z

. shift

φ L .

L , φ

(Δx , Δy , Δz)

:

shift + @ (Δx , Δy , Δz)

.
shift + @ L < φ

— — —) :

(... —

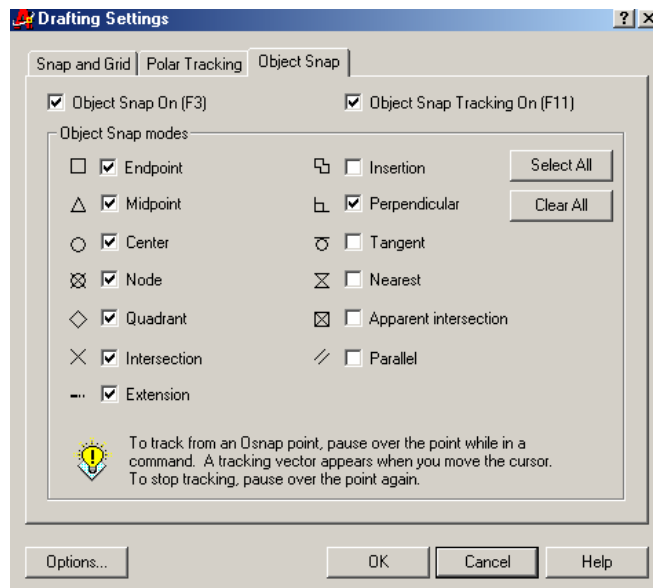
:

object snap

shift +

Setting Osnap

. (-)



شکل رقم ٢-١

F3

F3

Osnap

٢- أوامر الرسم والتعديل :

LINE :  ()

Draw ⇒ Line

) Enter L Enter Line

(

-)

(

أوامر الرسم	أوامر التعديل
خط	مسح
خط انشاء	نسخ
خط متعدد	انعكاس
خط مركب	موازي
مضلع	مصفوفة عناصر
مستطيل	تحريك
قوس	تدوير
دائرة	مقياس
خط مرن	تحدد
قطع ناقص	تطويل
ادراج كتلة	قطع
صنع كتلة	تحدد خط
نقطة	كسر
تحشير	شفرة
منطقة	تدوير
ادراج نص	تدوير

شكل رقم ١-٢

line Specify first point:

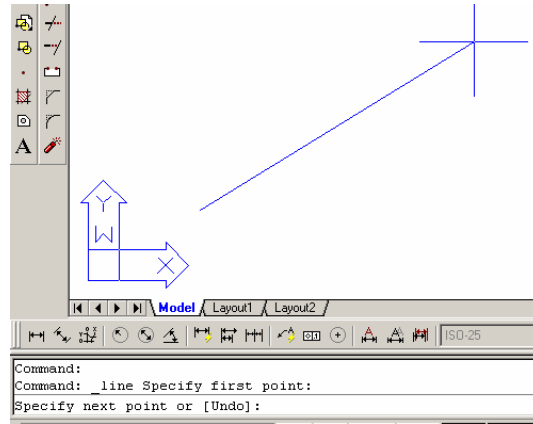
Command:
Command:
Command: _line Specify first point:

شكل رقم ٢-٢

)

.(

Specify next point or [Undo]:



شكل رقم ٣-٢

enter

Enter

u ()

[Undo]

u-

line

enter

(u enter



)

enter

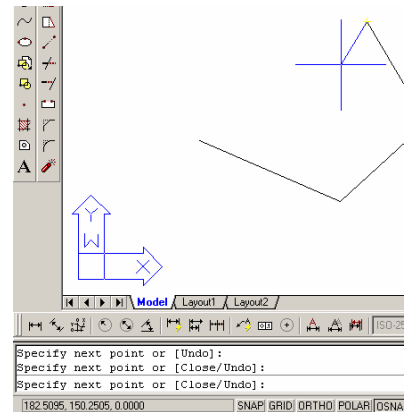
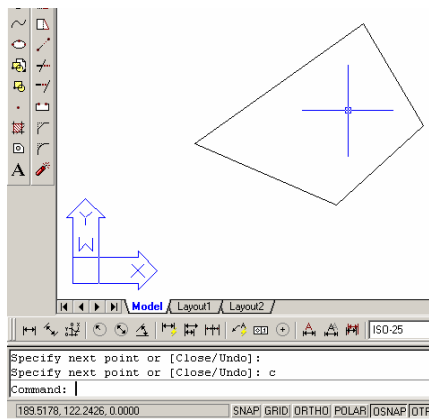
F8

ortho

enter

Close

:(-)



شكل رقم ٤-٢

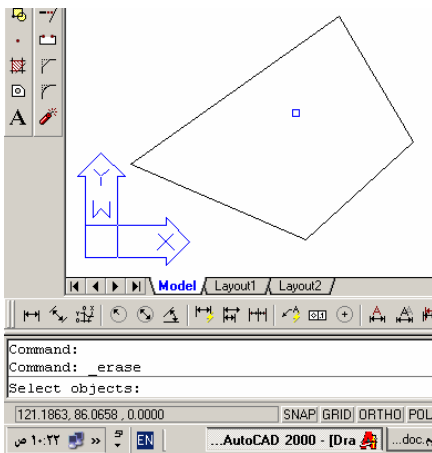
ERASE

:
Modify ⇒ Erase



Enter E Erase

) select objects



شكل رقم ٥-٢

Enter

Erase

Delete

Command

Esc

:

Enter All

shift

: **Rectangle**

:

Draw ⇒ rectangle



Enter Rec

:

Specify first corner point or [Chamfer/Elevation/Fillet/Thickness/Width]:

()

Specify other corner point: :

:

[Chamfer/Elevation/Fillet/Thickness/Width]:

chamfer •

:

Specify first corner point or [Chamfer/Elevation/Fillet/Thickness/Width]:

Enter c

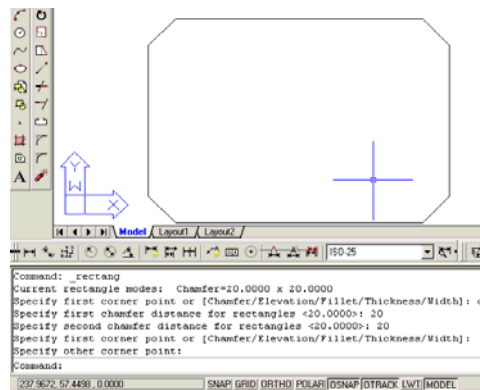
Specify first chamfer distance for rectangles <0.0000>:

Enter

Specify second chamfer distance for rectangles <20.0000>:

Enter

(-) :



شكل رقم ٦-٢

elevation •

). (Z=0)

Fillet •

: (-)

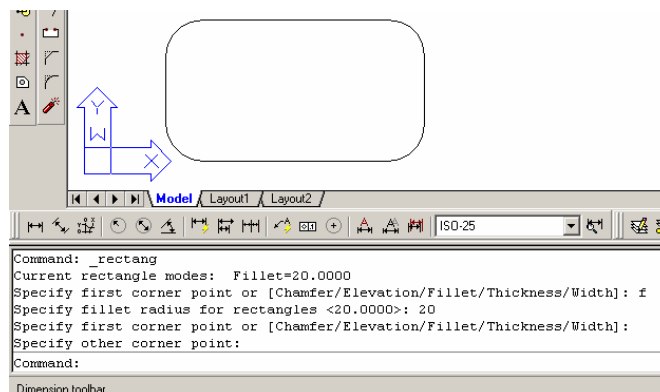
Chamfer

Thickness •

() Z

Width •

. ()



شكل رقم ٧-٢

()

F8

Command: <Ortho on > L

Command: _line Specify first point:

Enter L

Specify next point or [Undo]: 50

Enter

Specify next point or [Undo]: 250

Enter

Specify next point or [Close/Undo]: 150

Enter

Specify next point or [Close/Undo]: @-150,75

Enter

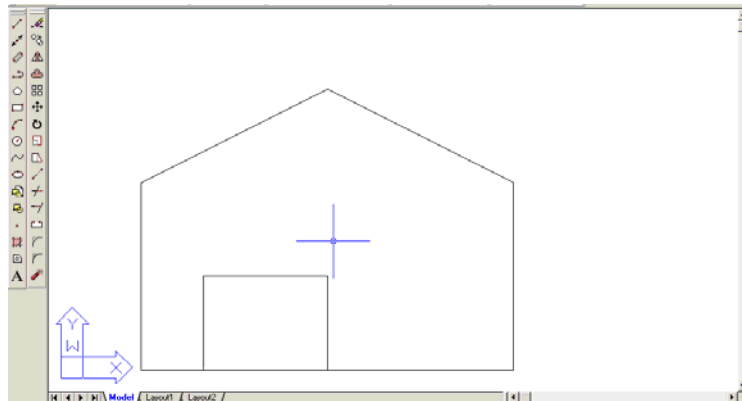
@-150,75

@-150,-75

Enter C

Enter Rec

@100,75



شكل رقم ٢-٨

-) first corner -

· (—

Fillet Chamfer

: MOVE

- Modify \Rightarrow Move

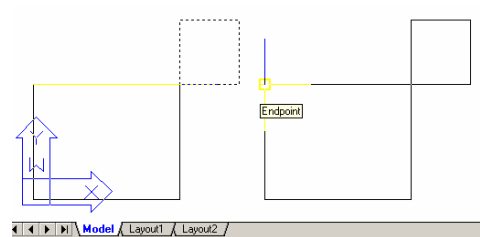
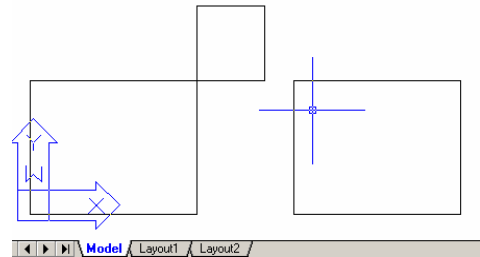
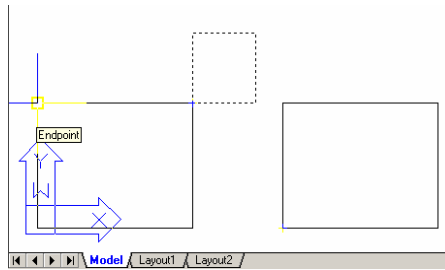


Enter Move o r M

```
. select objects . move -
```

$$) \cdot (\quad - \quad - \quad)$$

∴ $\left(\begin{array}{c} 1 \\ 2 \\ 3 \end{array} \right) = \left(\begin{array}{c} 1 \\ 2 \\ 3 \end{array} \right)$.



شكل رقم ٩-٢

ج

Move

(_ -)

(_ -)

(_ -)

:CIRCLE



()

Draw ⇒ circle

:

Enter C

circle Specify center point for circle or [3P/2P/Ttr (tan tan radius)]:

:

Specify radius of circle or [Diameter]:

(Enter D) Diameter

3p

.(

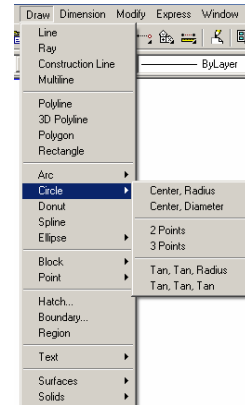
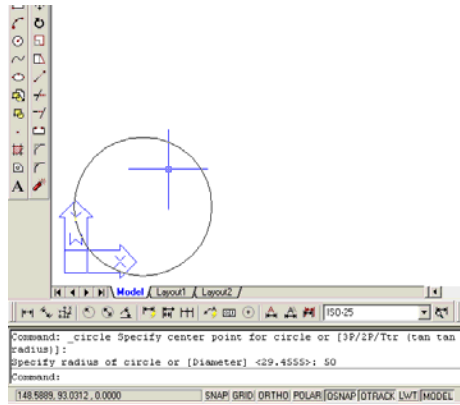
)

2p

Ttr(tan tan radius)

(Draw⇒Circle⇒Tan Tan Tan)

TTT



: ARC



Draw ⇒ arc
Enter a

arc Specify start point of arc or [Center] :

Specify second point of arc or [Center/END]:

:

()

Specify end point of arc :

:

(-)

:

:

Start ,Center , End .

Start ,Center , Angel.

Start ,Center , Length.

Start, End ,Angel .

Start, End ,Direction .

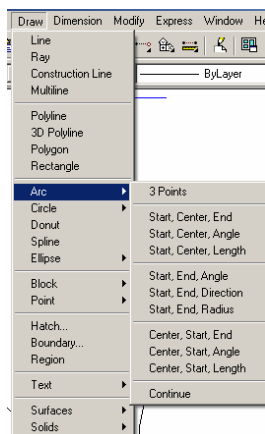
Start, End ,Radius .

Center , Start ,End .

Center , Start ,Angel .

Center , Start ,Length .

Continue ()



شكل رقم ١٢-٢

Command: a

ARC Specify start point of arc or [Center]

Specify second point of arc or [Center/END]: ce

Specify center point of arc:

Specify end point of arc or [Angle/chord Length]: L

Specify length of chord: 50

Enter

POLYLINE :

)

:

.(

Line



Draw ⇒ Polyline

Enter PL

:

)

)

: Specify start point:

Current line-width is 0.0000

(

Specify next point or [Arc/Close/Halfwidth/Length/Undo/Width]:

)

. Enter

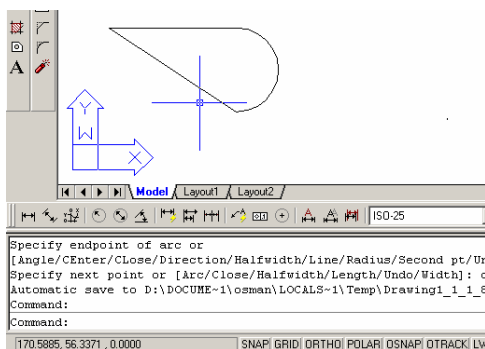
Enter

:

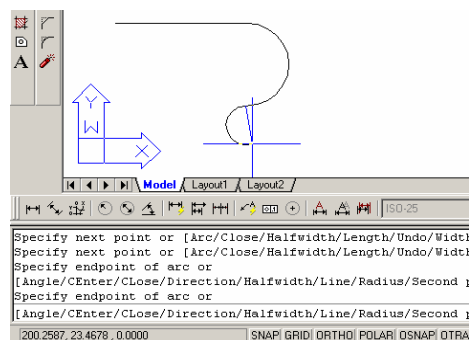
Close

Arc

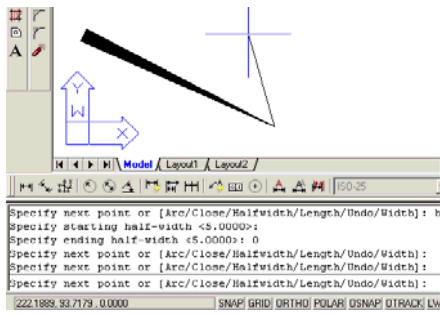
Line



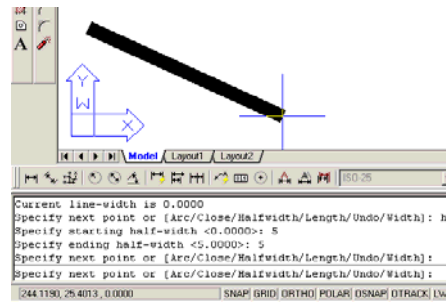
:



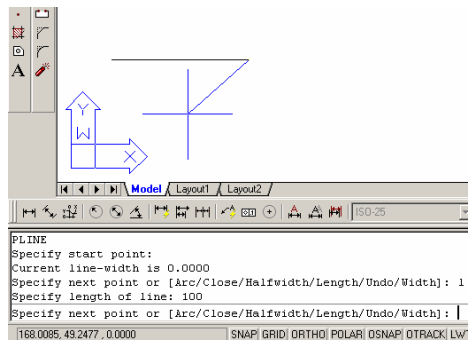
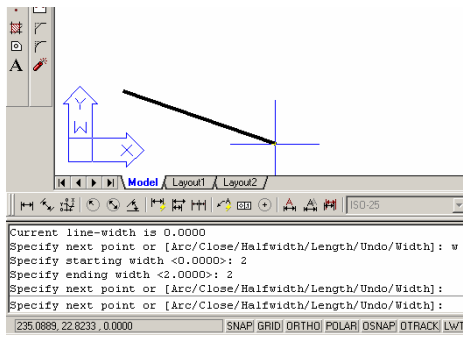
Halfwidth



Halfwidth Width



Length



Undo

شكل رقم ١٣-٢

OFFSET :



Modify ⇒ offset

Enter O

Specify offset distance or [Through]

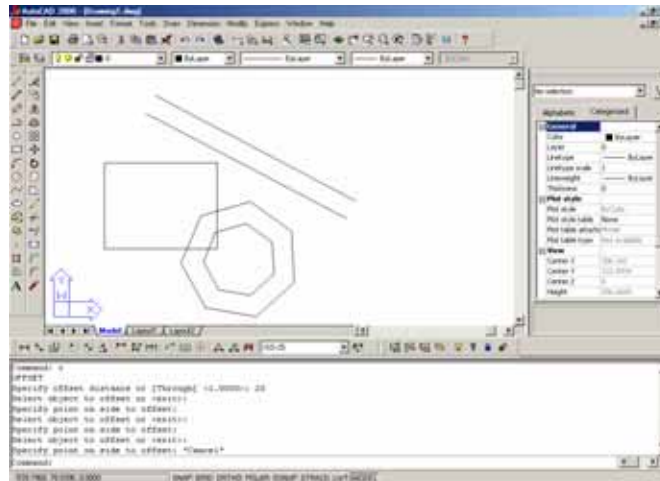
<1.0000>

Select object to offset or <exit> :

Enter

Polyline

Esc Enter



شكل رقم ١٤-٢

MIRROR



Modify ⇒ mirror

Enter Mi

"

Specify first point of mirror line: Specify second point of mirror

((line))

Delete source objects? [Yes/No] <N>

TRIM :



Modify ⇒ trim

Enter Tr

Command: _trim

Current settings: Projection=UCS Edge=None

Select cutting edges ...

Enter

cutting edges

:

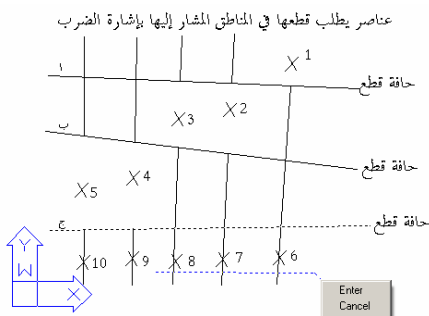
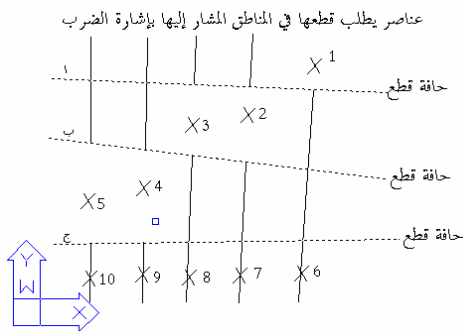
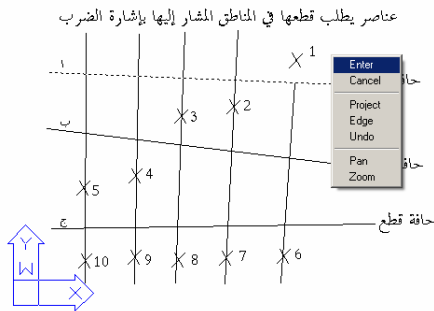
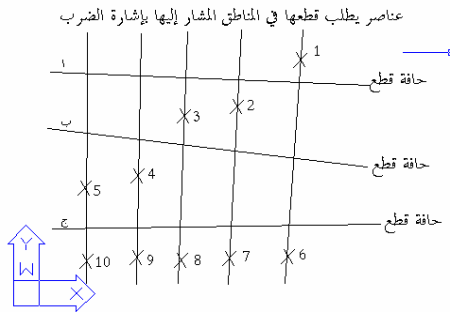
Select object to trim or [Project/Edge/Undo]

Enter f

Edge

()
(-)

:



Enter tr : Trim / / / /
Current settings: Projection=UCS
Edge=None
.. Select cutting edges
Select objects: 1 found
:Select objects

Select object to trim or [Project/Edge/Undo]:

Enter

: / - - /

Current Enter tr : Trim
settings: Projection=UCS Edge=None
.. Select cutting edges
:Select objects
/

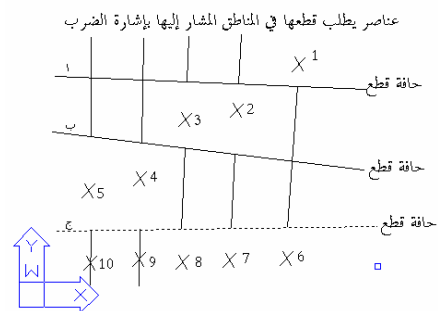
Select object to trim or [Project/Edge/Undo]:

Enter

: / - - /

Current Enter tr : Trim
settings: Projection=UCS Edge=None
.. Select cutting edges
:Select objects
Enter f :Select objects
Select object to trim or [Project/Edge/Undo]: f
:First fence point
Specify endpoint of line or [Undo]

Enter



EXTEND :



Modify ⇒ Extend

Enter Ex

trim

Enter

. edge

fence

Trim ,Extend

Enter

Trim ,Extend

Fence

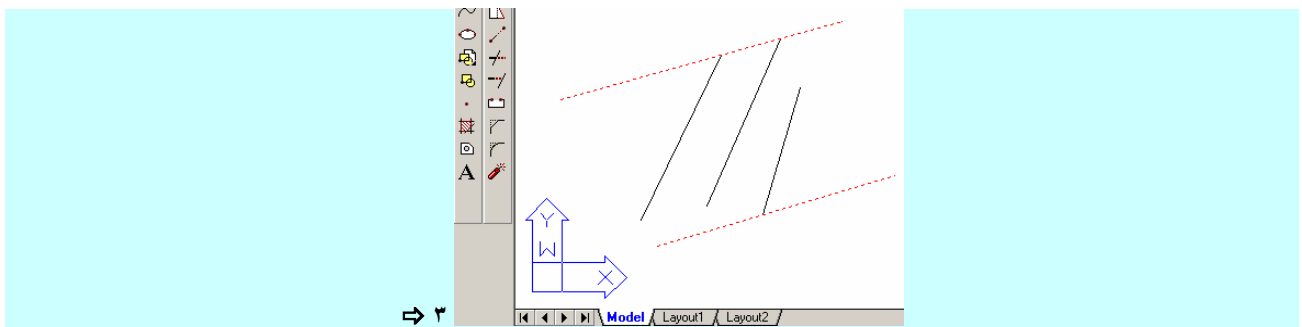
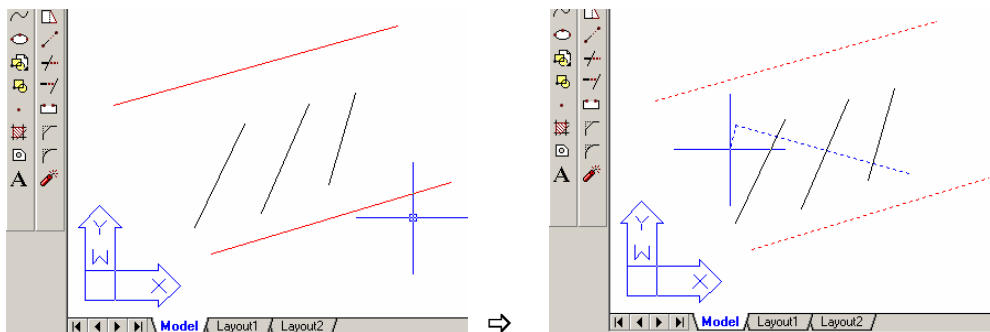
(_ -) (_ -)

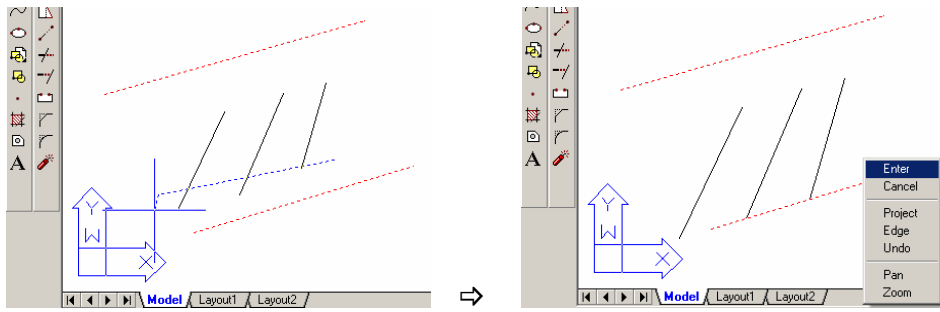
fence (F ,Enter)

) (_ -)

(_ -) . (

(_ -)





شكل رقم ١٧-٢

FILLET :



Modify ⇒ Fillet

Enter F

:

select first object

polyline

radius

)

Enter

fillet

(

.no trim

trim

trim

ملاحظة

(line pl) pl

fillet pl

fillet

(0)

:

:

()

Command: L
Command: _line Specify first point: -100.0
Specify next point or [Undo]: 100.0

(0,0)
. (100,0) (-100,0) Enter L
Enter

Command: L
Command: _line Specify first point: -100.0
Specify next point or [Undo]: 100.0

. (0,100) Enter L
Enter (0,-150)

Command: L
 LINE Specify first point: 0,0
 Specify next point or [Undo]: @150<-45

Command: MI
 MIRROR
 Select objects: 1 found
 Specify first point of mirror line: 0,0
 Specify second point of mirror line: 0,100
 Delete source objects? [Yes/No] <N>:

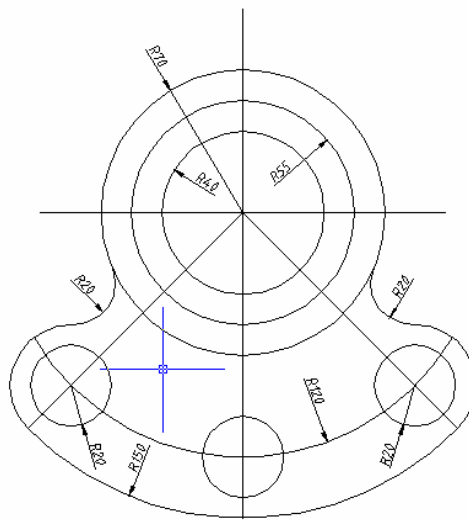
Command: _circle Specify center point for circle or [3P/2P/Ttr (tan tan radius)]:0,0
 Specify radius of circle or [Diameter] <10.0000>: 40
 CIRCLE Specify center point for circle or [3P/2P/Ttr (tan tan radius)]: 0,0
 Specify radius of circle or [Diameter] <10.0000>: 70
 Command: O
 OFFSET
 Specify offset distance or [Through] <15.0000>: 50
 Select object to offset or <exit>:
 Specify point on side to offset:
 OFFSET
 Specify offset distance or [Through] <50.0000>: 30
 Select object to offset or <exit>:
 Specify point on side to offset:
 Command: C
 CIRCLE Specify center point for circle or [3P/2P/Ttr (tan tan radius)]:
 Specify radius of circle or [Diameter] <55.0000>: 20
 Command: C
 CIRCLE Specify center point for circle or [3P/2P/Ttr (tan tan radius)]:
 Specify radius of circle or [Diameter] <20.0000 >: 20

Command: O
 OFFSET
 Specify offset distance or [Through] <30.0000>: 10
 Select object to offset or <exit>:
 Specify point on side to offset:

Command: F
 FILLET
 Current settings: Mode = TRIM, Radius = 10.0000
 Select first object or [Polyline/Radius/Trim]: R
 Specify fillet radius <10.0000>: 20
 Command:
 FILLET
 Current settings: Mode = TRIM, Radius = 20.0000
 Select first object or [Polyline/Radius/Trim]:

Command: TR
 TRIM
 Current settings: Projection=UCS Edge=None
 Select cutting edges...
 Select objects: 1 found

L
 @150<-45 () Enter
 Enter
 MIRROR
 Enter MI
 (0,0)
 (0,100)
 (y
 X
 Enter c)
 Enter (0,0)
 Enter (40)
 Enter (70)
 Enter O
 Enter (50)
 Enter) Enter
 Enter (30)
 ()
 Enter c)
)
 - . ()
 Enter (20)
 OFFSET
 (10) Enter O
 FILLET / /
 (20) R
 Enter
 Enter
 Enter tr TRIM
 (-)



شكل رقم ١٨-٢

: COPY

:
Modify ⇒ Copy



Enter Copy or Co

Move

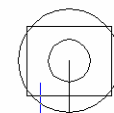
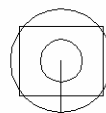
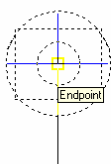
Select objects

Specify base point or displacement, or [Multiple]:

Multiple

: ()

Specify second point of



ARRAY :



Modify ⇨ Array

Enter Ar

Select objects:.

Enter the type of array [Rectangular/Polar] <R>:

P

R

: Enter R

Enter the number of rows (---) <1>:

: 10

Enter the number of columns (|||)

:

Enter the distance between rows or specify unit cell (---):

Specify the distance between columns (|||)

.(-) .

:

P

Specify center point of array:

:

Enter the number of items in the array:

:

Specify the angle to fill (+=ccw, -=cw) <360>:

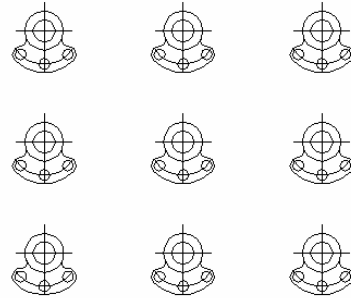
: . 360)

Rotate arrayed objects? [Yes/No] <Y>:

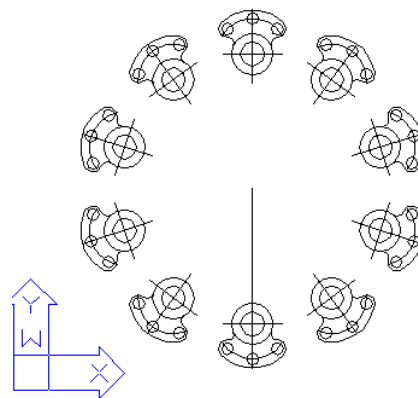
(-)

enter

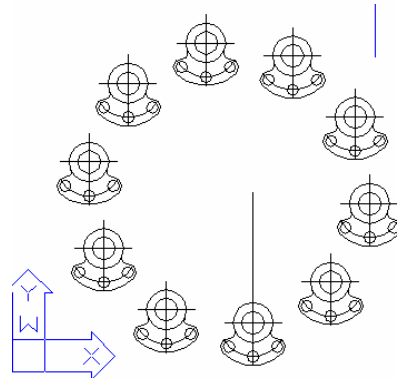
Command: ar
ARRAY
Select objects: Specify opposite corner: 13 found
Select objects:
Enter the type of array [Rectangular/Polar] <R>: r
Enter the number of rows (---) <1>: 3
Enter the number of columns (|||) <1>: 3
Enter the distance between rows or specify unit cell (---):
400
Specify the distance between columns (|||): 500



Command: ar
ARRAY
Select objects: Specify opposite corner: 13 found
Select objects:
Enter the type of array [Rectangular/Polar] <R>: p
Specify center point of array:
Enter the number of items in the array: 10
Specify the angle to fill (+=ccw, -=cw) <360>:
Rotate arrayed objects? [Yes/No] <Y>: y



Command: ar
ARRAY
Select objects: Specify opposite corner: 13 found
Select objects:
Enter the type of array [Rectangular/Polar] <R>: p
Specify center point of array:
Enter the number of items in the array: 10
Specify the angle to fill (+=ccw, -=cw) <360>:
Rotate arrayed objects? [Yes/No] <Y>: n



شكل رقم ٢-٢٠

:DONUT

Draw ⇒ Donut

Enter do

Specify inside diameter of donut ()

Specify outside diameter of donut ()

. enter

Specify center of donut or <exit>:

: SCALE



Modify ⇒ Scale

Enter sc

Select objects

:

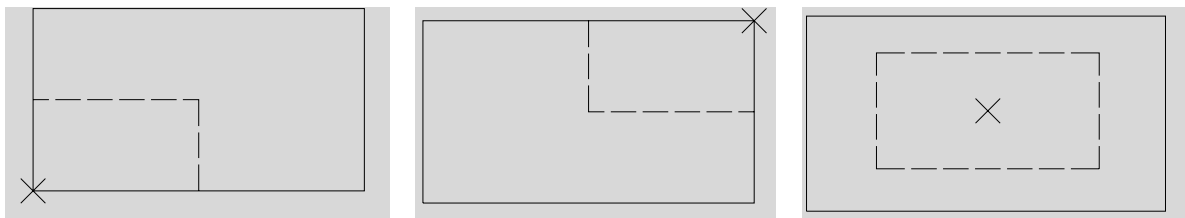
Specify base point:

()

Specify scale factor or [Reference]:

Reference

(-)



شکل رقم ۲-۲۱

: STRETCH :

:



Modify ⇒ Stretch

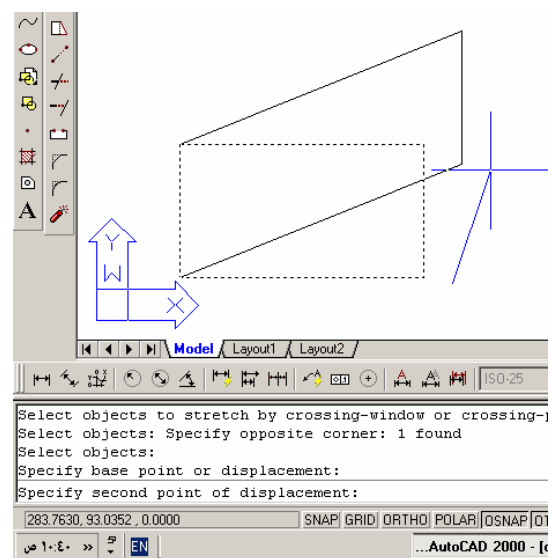
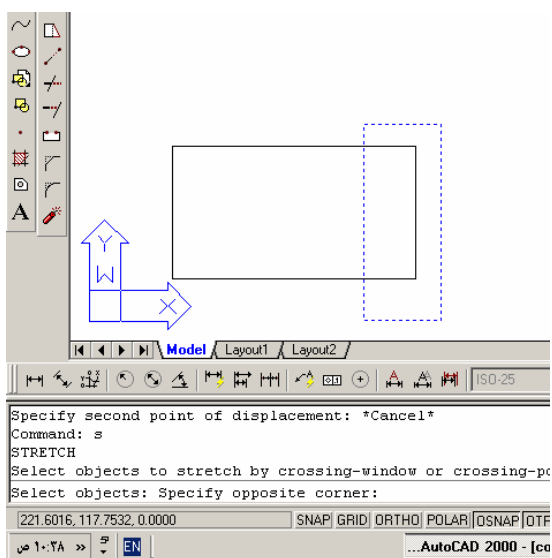
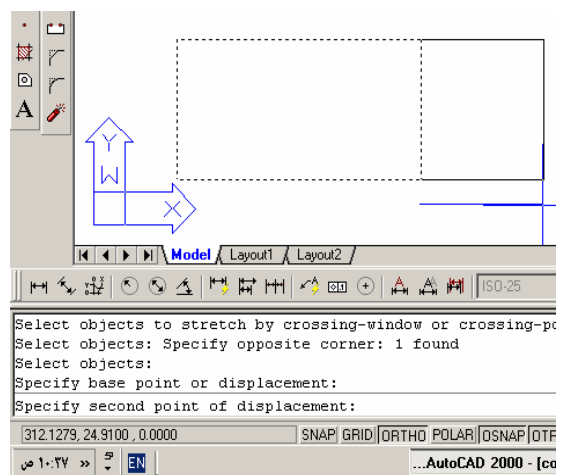
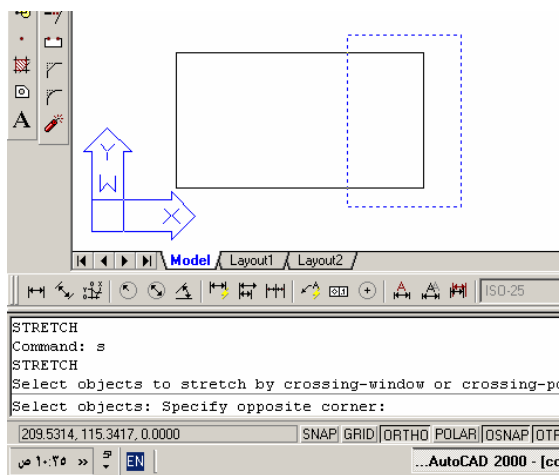
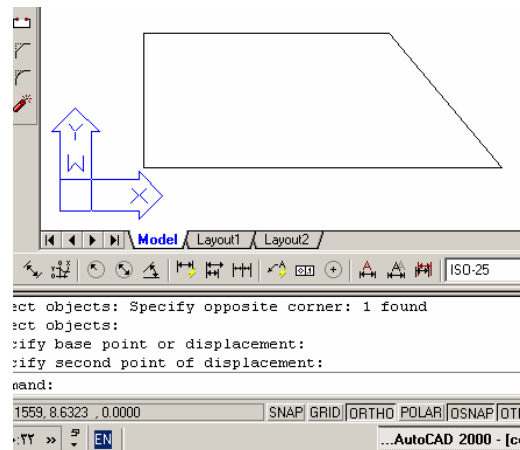
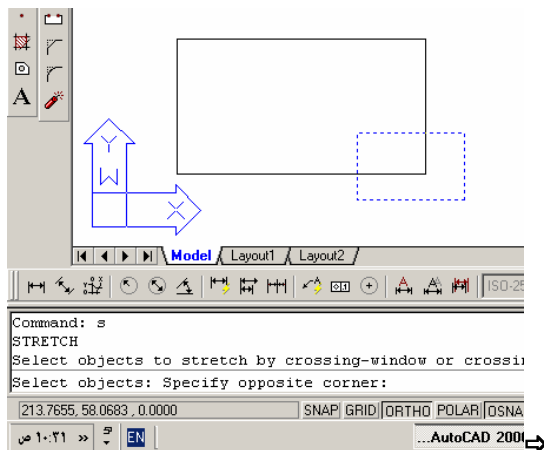
Enter S

stretch

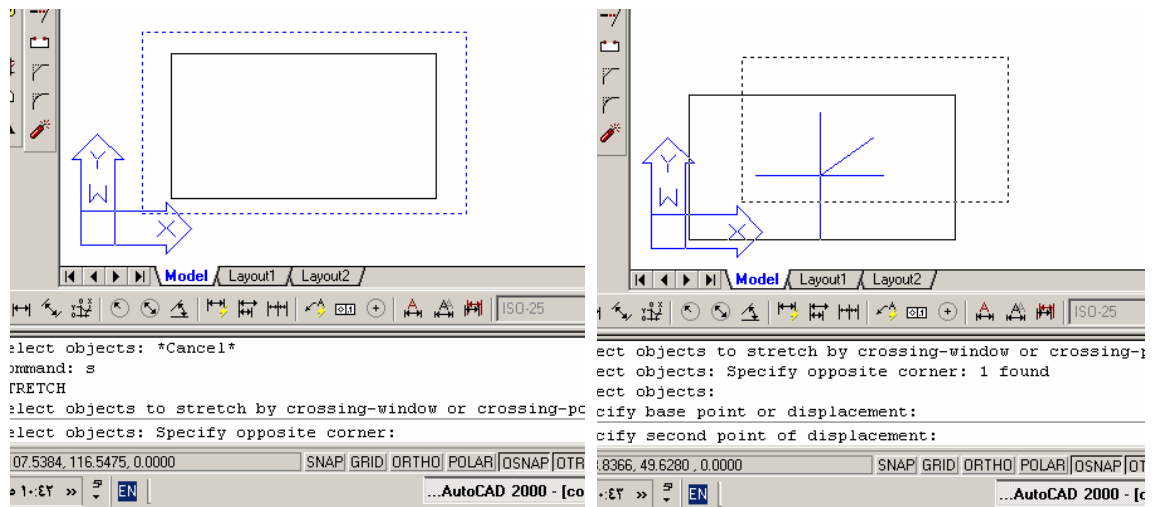
Select objects to stretch by crossing-window or crossing-polygon...

Specify base point or displacement:

. Specify second point of displacement:



شكل رقم ٢-٢٤



شكل رقم ٢-٢٥

. move stretch

ملاحظات :

)

Move , Copy , Stretch

(

Enter P

: ROTATE

:

:

Modify ⇒ ROTATE



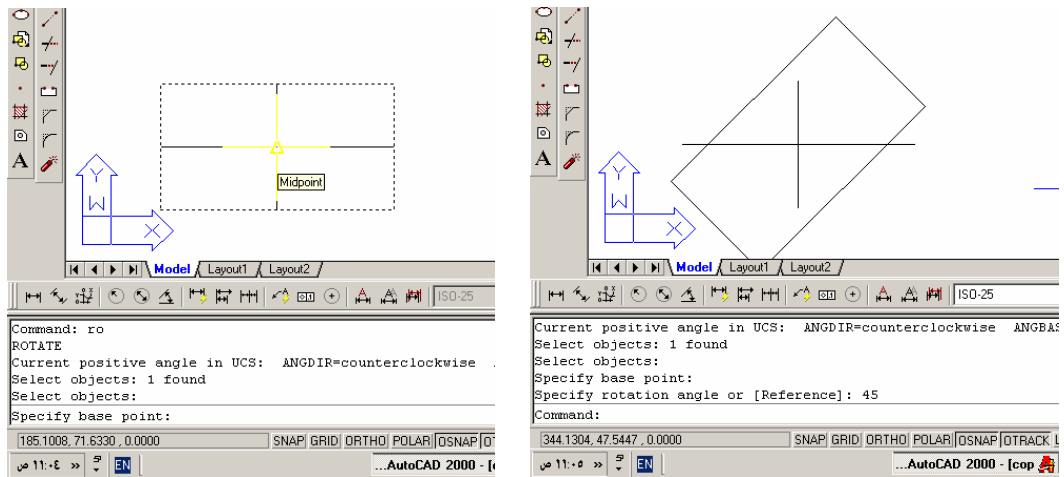
Enter RO .

Select objects

Specify base point:

Specify rotation angle or [Reference]:

reference



شكل رقم ٢-٢٦

construction line

Draw ⇒ Construction line



Enter XL

XLINE Specify a point or [Hor/Ver/Ang/Bisect/Offset]:

: hor

: Ver

: Ang

() : Offset

: Besect

polygon



Draw ⇒ polygon

Enter Pol

POLYGON Enter number of sides <4>:

Specify center of polygon or [Edge]:

Specify first endpoint of edge:

: Specify second endpoint of edge

Enter an option [Inscribed in circle/Circumscribed about circle] <I>:

(I)

:

:

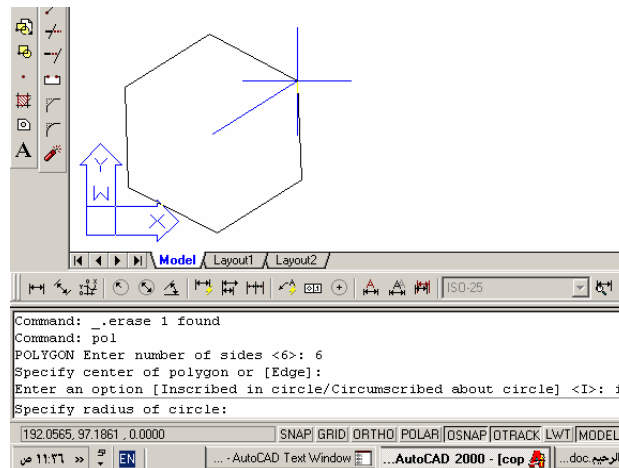
(

) (C)

Specify radius of circle:

. (

).



شكل رقم ٢٧-٢

: **lengthen**

Modify ⇒ Lengthen

Enter Len



scale

Select an object or [DElta/Percent/Total/DYnamic]:

:

: DElta

%

:

:

: Percent

. %

: Total

: DYNAMIC

: break

:



Modify ⇒ Break

Enter Br

/ /

)

(

ELLIPSE



Draw ⇒ Ellipse

Enter El

:

Command: _ellipse

Specify axis endpoint of ellipse or [Arc/Center]:

Specify other endpoint of axis:

Specify distance to other axis or [Rotation]:

Command: _ellipse

Specify axis endpoint of ellipse or [Arc/Center]: a)

Specify other endpoint of axis

Specify distance to other axis or [Rotation]: r (

Specify rotation around major axis: 45

Command: _ellipse

Arc

Specify axis endpoint of ellipse or [Arc/Center]: a

Specify axis endpoint of elliptical arc or [Center]:

Specify other endpoint of axis:

Specify distance to other axis or [Rotation]

Specify start angle or [Parameter]

Specify end angle or [Parameter/Included angle]:

Command: _ellipse

Specify axis endpoint of ellipse or [Arc/Center]: c

Specify center of ellipse

Specify endpoint of axis

Specify distance to other axis or [Rotation]:

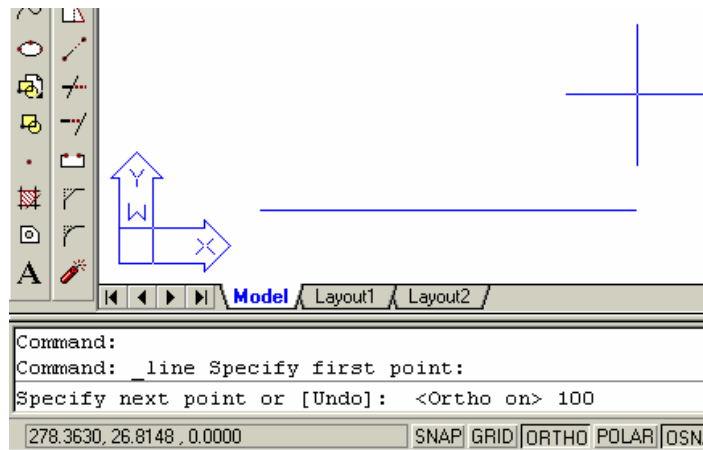
٣- الأدوات المساعدة للرسم في أوتوكاد

:

Orthographic

- -

. Enter



شكل رقم ١-٣

Ortho

F8

on

Enter

Ortho

(Ortho)

Off

:

- -

×

×

×

×

×

:

: Enter Limits

Specify lower left corner or [ON/OFF] <0.0000,0.0000>:

: Enter <0.0000,0.0000>:

Enter Specify upper right corner <420.0000,297.0000>: :

.

×

Format⇨Drawing Limits

: (Grid)

- -

Grid

Setting Grid

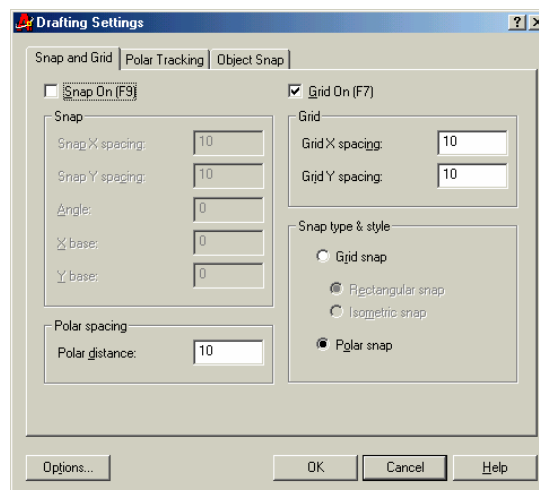
:

Drafting Setting

Grid X spacing , Grid Y spacing

Grid On

F7



()

Tools ⇒ Drafting Setting

Drafting Setting

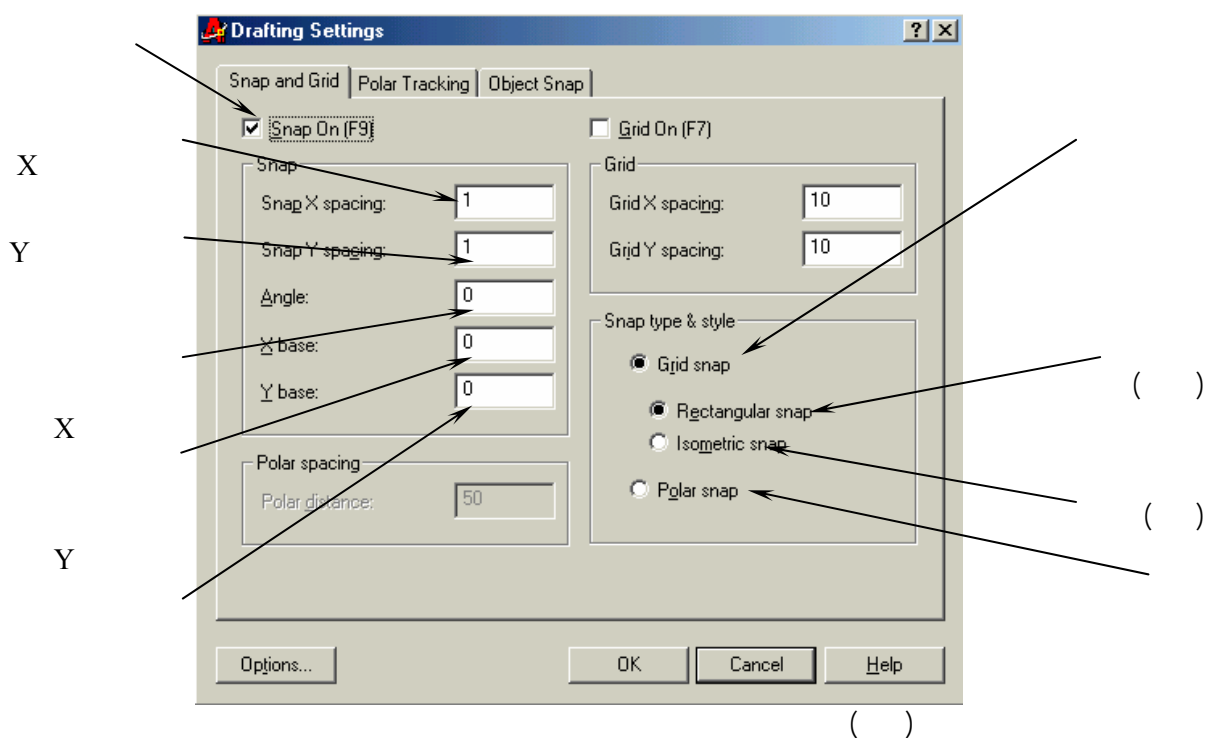
: (Snap)

- -

F9

Snap

: Drafting Setting



X base ,Y base

Snap Y spacing Snap X spacing

/ /

X base ,Y base

/

/

/ /

. / /

T

polar snap

:

(snap

polar

)

. Snap type & style

Polar Snap

Snap And Grid

Increment Angle polar distance
Polar tracking

polar, snap

Grid Snap On Snap

Polar Snap On

Relative Polar tracking

Polar Angle measurement To last segment

() - -

) Object Snap
(Object Snap

() ...

()

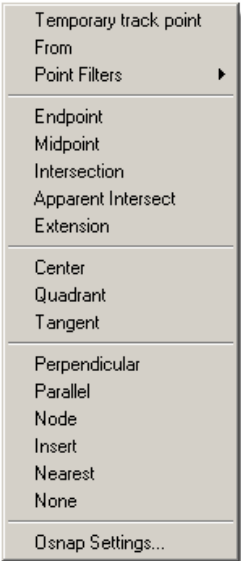
...



Drafting Setting

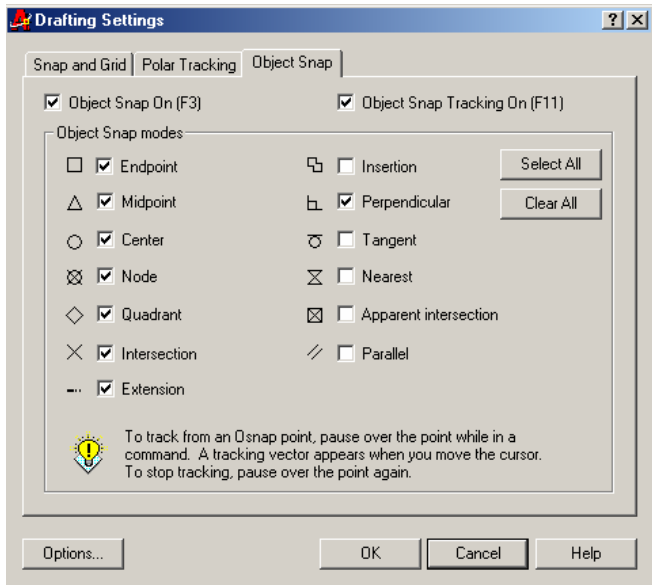
()

()



Shift

()
Osnap
Drafting Setting
Settings



()

:

:

:

:

temporary track point:

Shift

temporary track point:

Enter

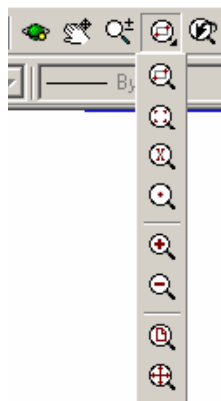
From

Point Filter

:
 End point .
 mid point .
 intersection .
 perpendicular .
 Parallel .
 Extension .
 Apparent intersection .

:
 Center .
 Quadrant .
 tangent .

:
 Node .
 insertion .
 () .
 nearest .
 none .



(Move & scale)

: ()

()

)
 . (Zoom previous

:
 Zoom
 Zoom window
 Zoom Dynamic
 Zoom Scale

			Zoom center
	.%		Zoom In
	. %		Zoom Out
			Zoom All
			Zoom Extents
- +			Zoom real time
	- +		
		.	
)		Pan
	.		
.			

لون العنصر :

·
:



()

شكل رقم ٢-٣

(Color control)

Esc

نمط خط الرسم:

(....)

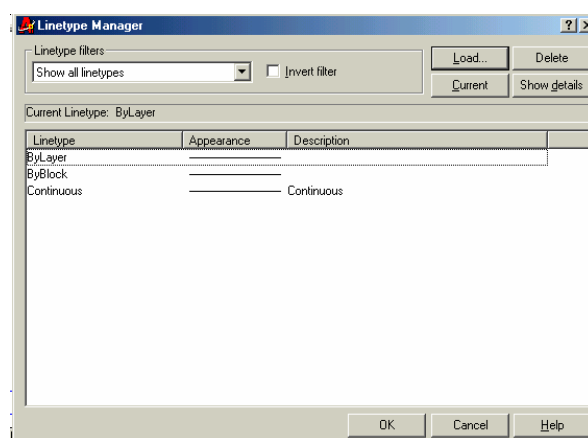
Line type control)

(

:

other... Line type control

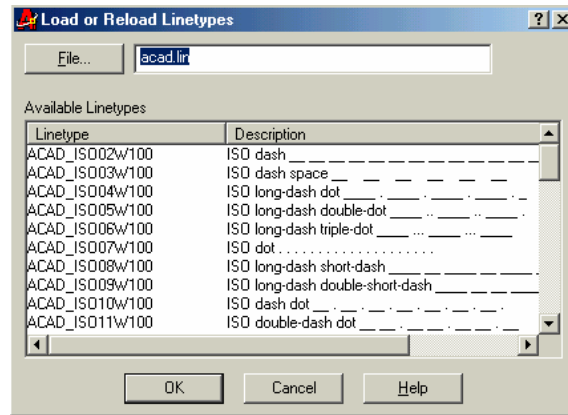
:



شكل رقم ٣-٣

:

load



شكل رقم ٣-٤

Ok

Ok

وزن خط الرسم (عرض الخط عند الطباعة) :

. Line weight control

نسخ الخصائص من عنصر إلى آخر :



match properties

Select source object:

. Select destination object(s) or [Settings]:

الطبقات وإدارتها :

:

:

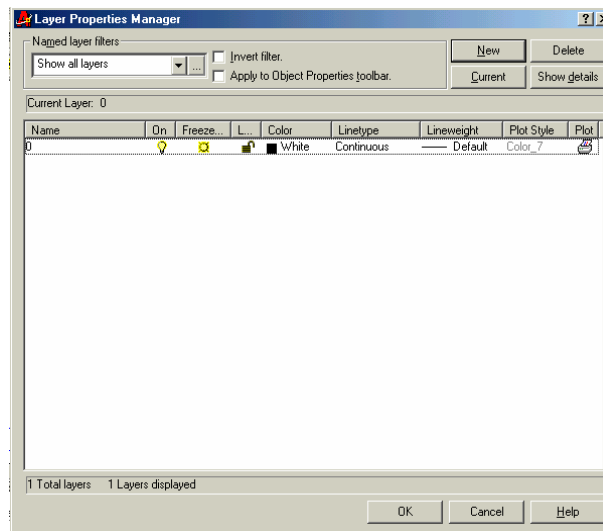
:

:



(-)

.



شكل رقم ٥-٣

New •

...wall , column , steel , ground

color () •

Linetype Continuous •

Load

— Default •

Lineweight •

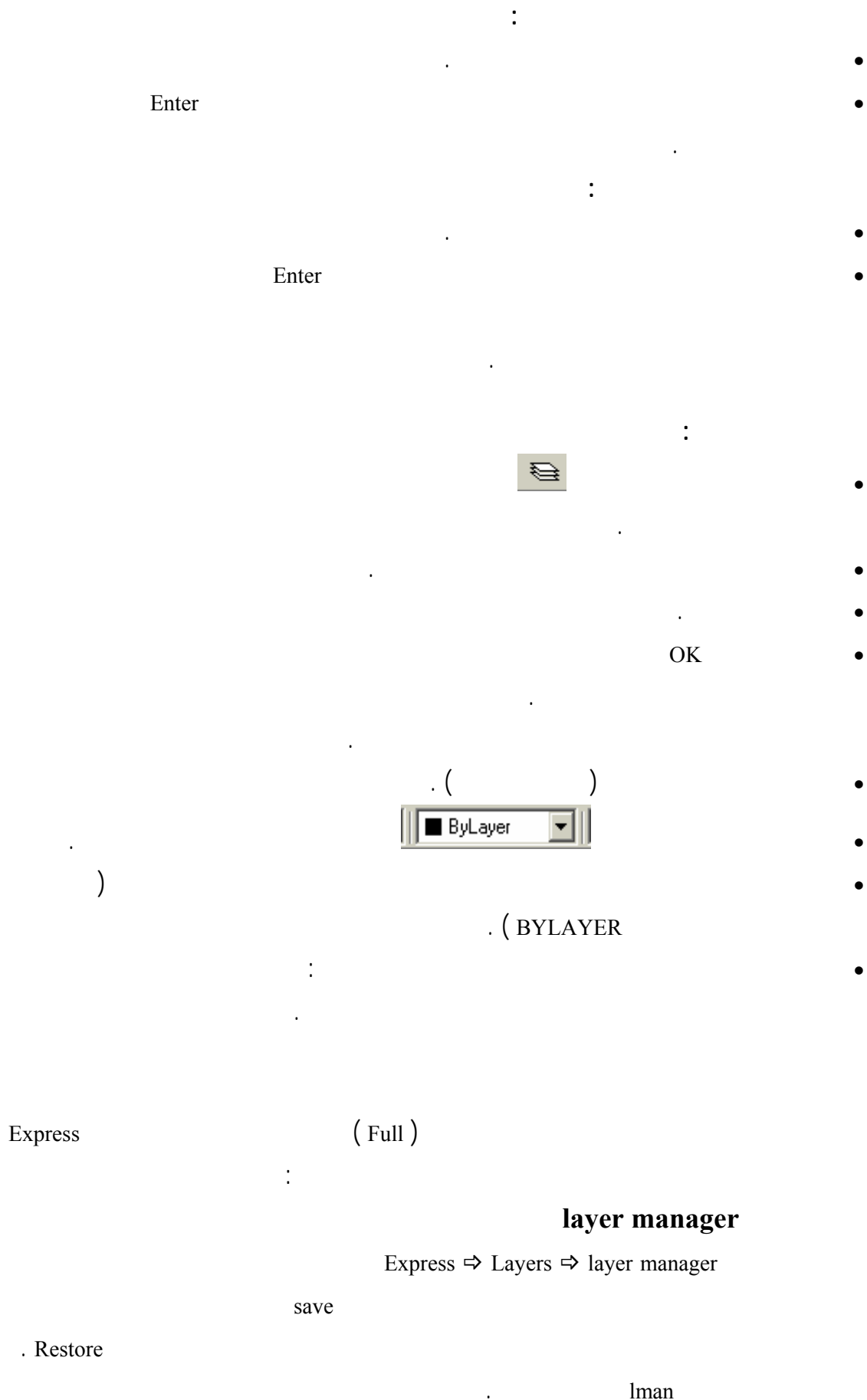
ok •

:

.Bylayer •

:

Esc •



:

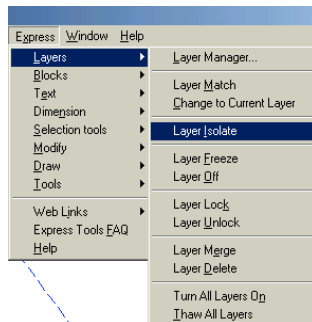
Express ⇒ Layers ⇒ layer match
LAYMCH

:

Express ⇒ Layers ⇒ Change to current Layer
Laycur

:

Express ⇒ Layers ⇒ Layer Isolate
Layiso



:

Express ⇒ Layers ⇒ Layer Freeze

Express ⇒ Layers ⇒ Layer Off

all

LayOff LayFrz

:

Laylck Express ⇒ Layers ⇒ Layer Lock

: Layulk Express ⇒ Layers ⇒ Layer Unlock

:

() Express ⇒ Layers ⇒ Layer Merge

()

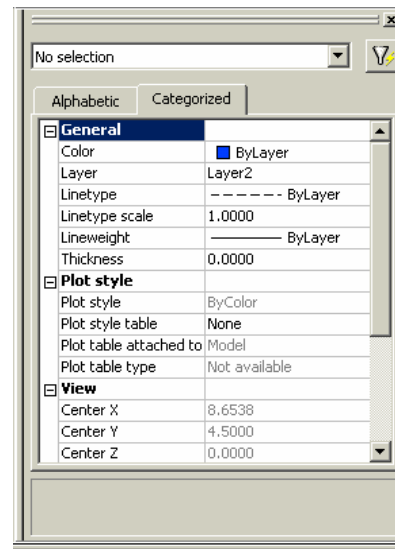
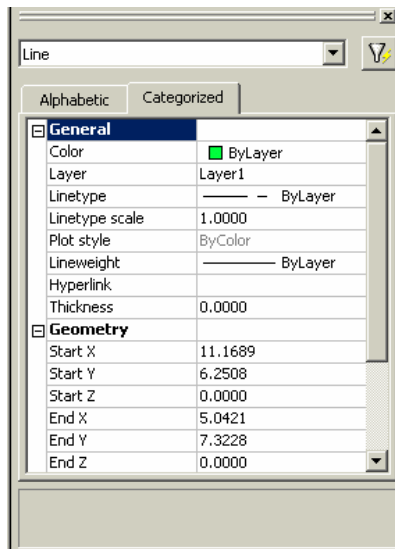
. Enter Y

:

Layon Express ⇒ Layers ⇒ Turn All Layers On

نافذة الخصائص :

Properties



2222

