



JYOTHISHMATHI INSTITUTE OF TECHNOLOGY & SCIENCE

Nustulapur, Karimnagar - 505481

(Approved by AICTE, New Delhi & Affiliated to JNTUH)

DESIGN OF MACHINE MEMBERS-II

BELTS, CHAINS AND GEARS

BY

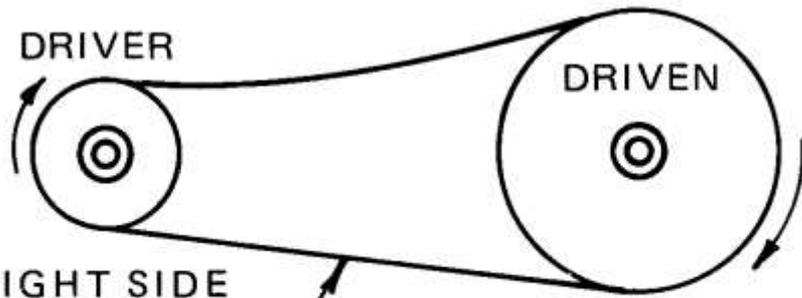
R.CHANDANA

ASST PROF(MECH DEPT)

III BTECH II SEM 2018-19

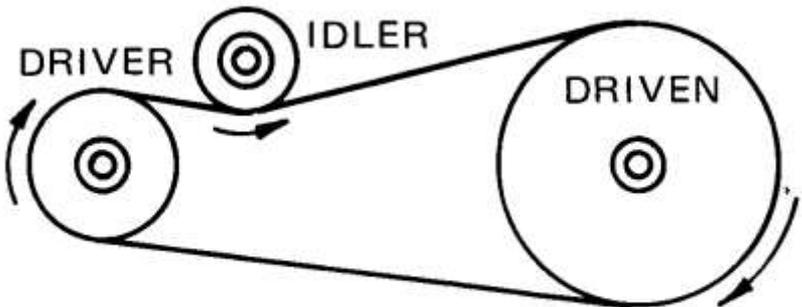
BELTS, CHAINS, AND GEARS

FLAT BELT DRIVES WITH PARALLEL SHAFTS

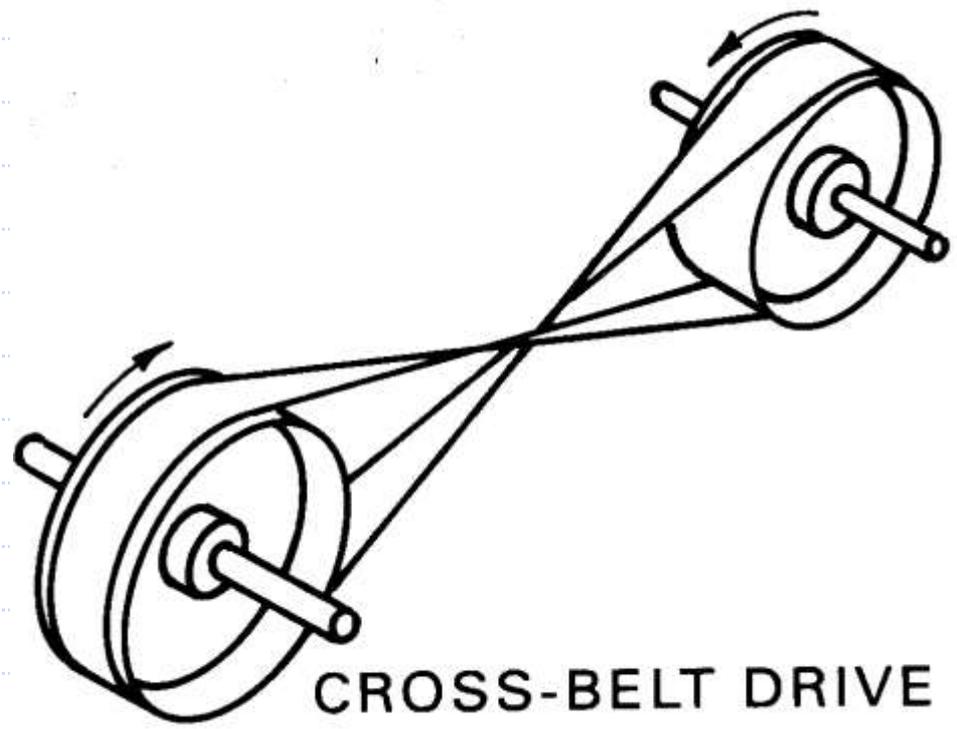


TIGHT SIDE SHOULD BE ON BOTTOM

OPEN DRIVE



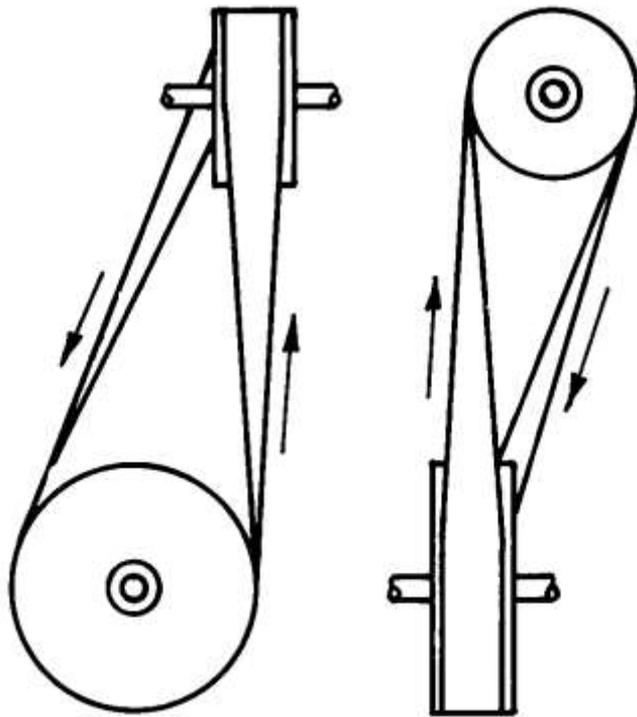
OPEN DRIVE WITH IDLER



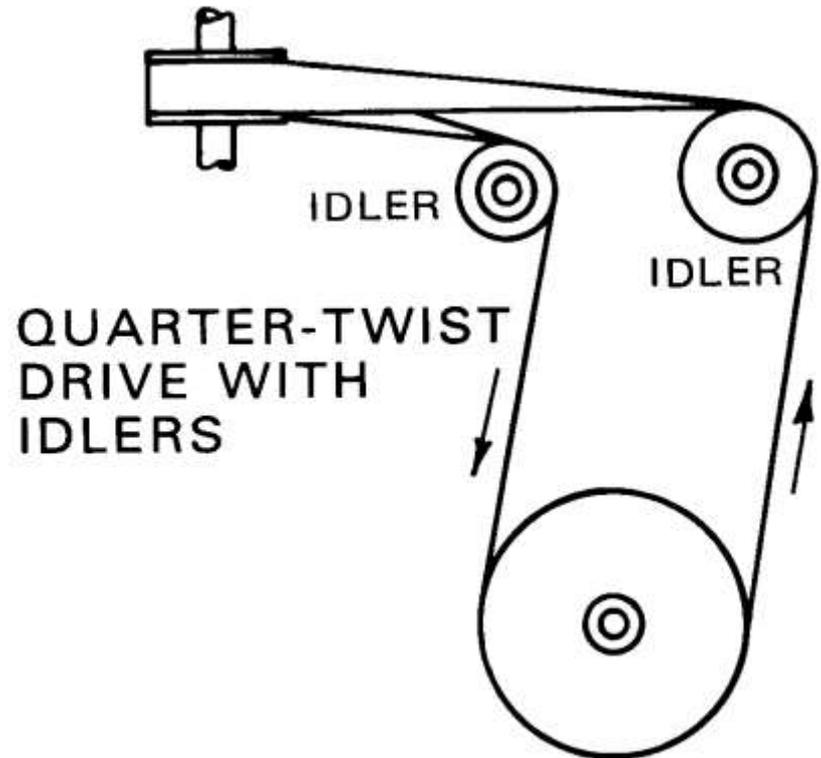
CROSS-BELT DRIVE

BELTS, CHAINS, AND GEARS

FLAT BELT DRIVES WITH PERPENDICULAR SHAFTS



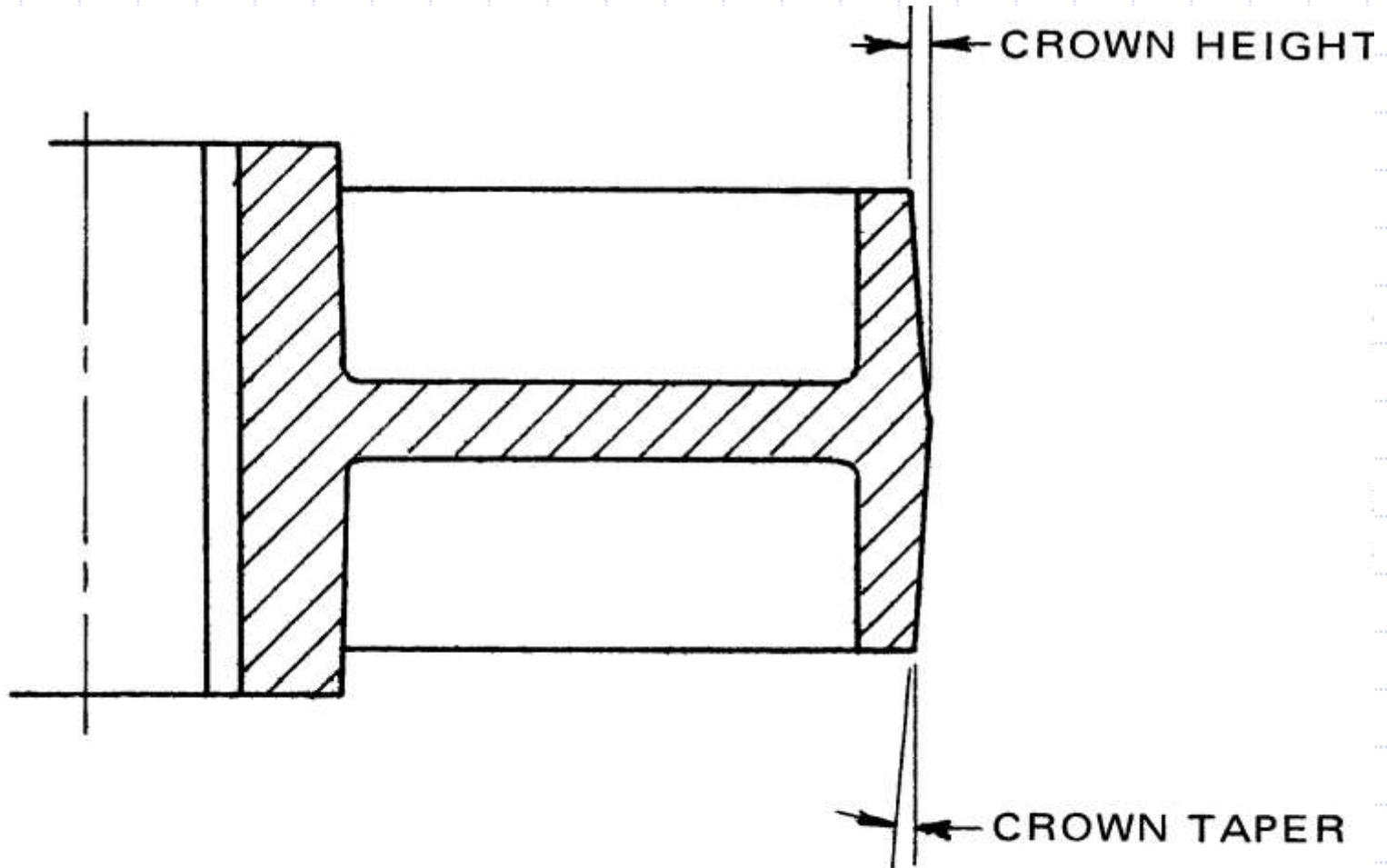
QUARTER-TWIST DRIVE



QUARTER-TWIST
DRIVE WITH
IDLERS

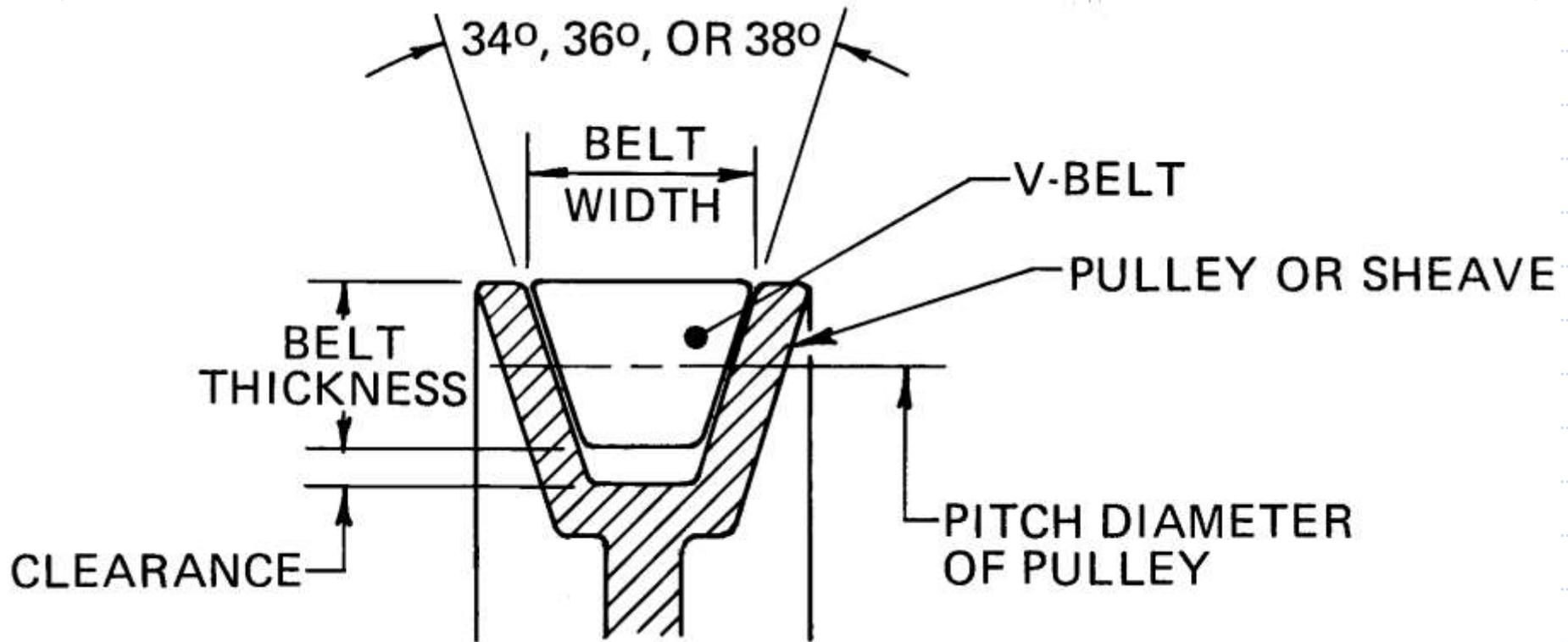
BELTS, CHAINS, AND GEARS

CROWN ON PULLEY



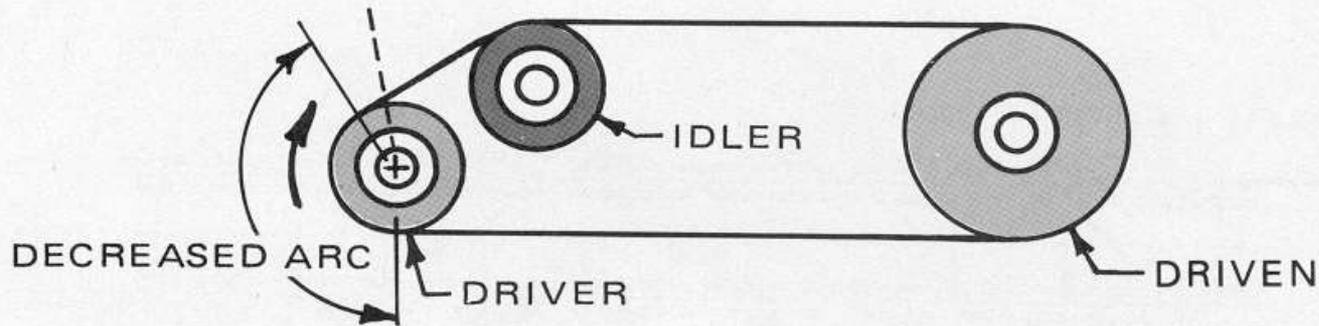
BELTS, CHAINS, AND GEARS

V-BELT AND PULLEY

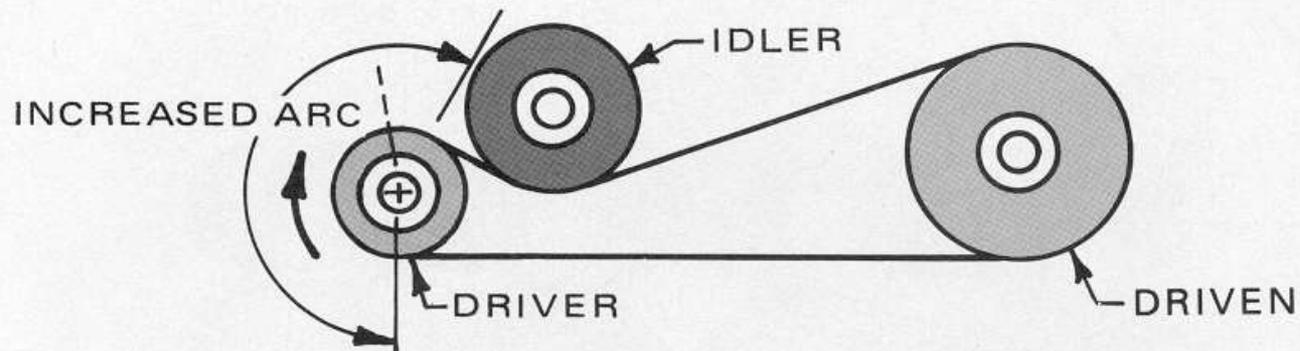


BELTS, CHAINS, AND GEARS

LOCATION OF IDLER PULLEYS



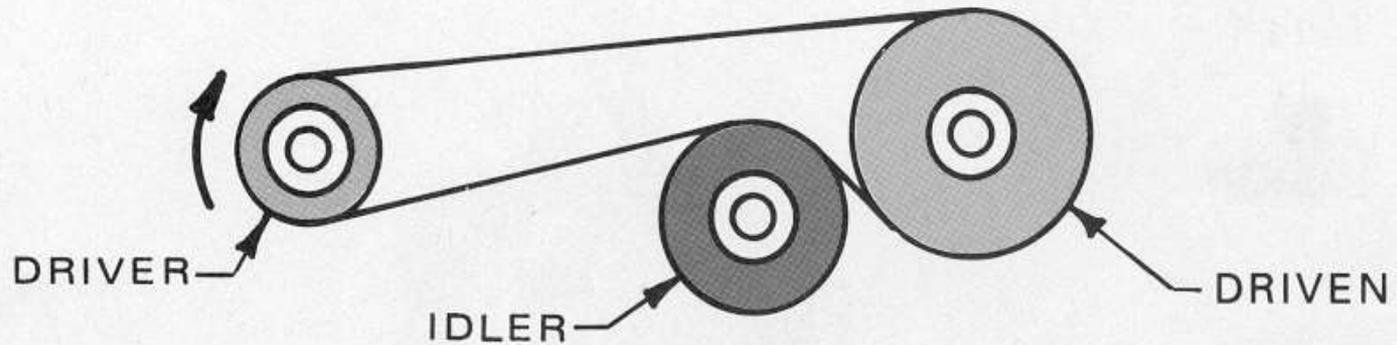
(A) INSIDE IDLER PULLEY, AT LEAST AS LARGE AS THE SMALL SHEAVE, ON THE SLACK SIDE OF THE DRIVE



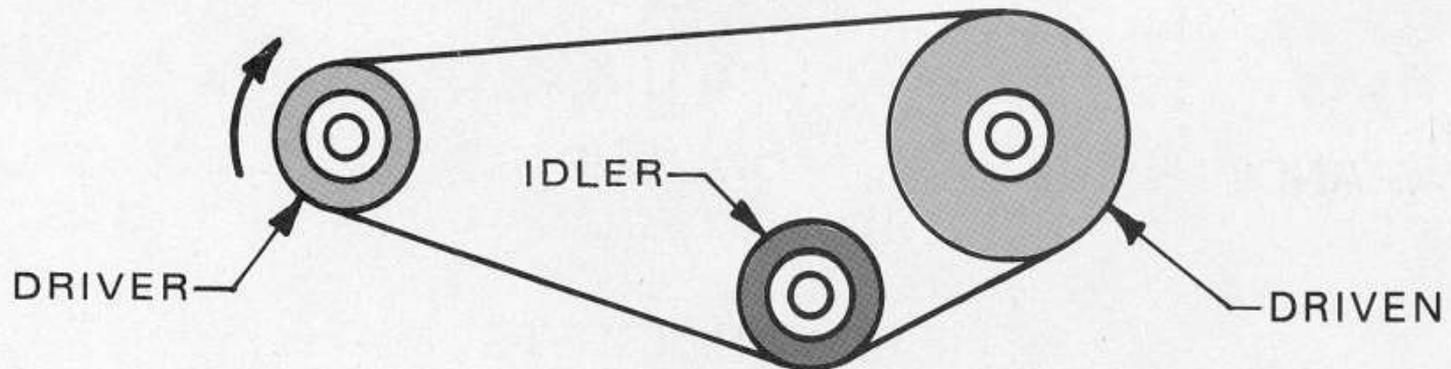
(B) OUTSIDE IDLER PULLEY, AT LEAST 1.3 LARGER THAN THE SMALL SHEAVE

BELTS, CHAINS, AND GEARS

LOCATION OF IDLER PULLEYS



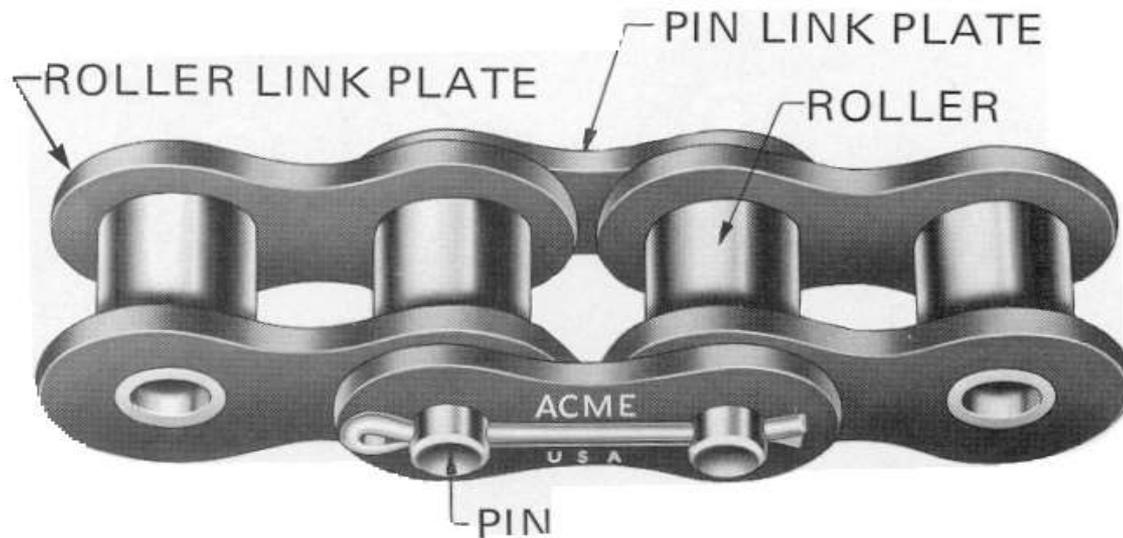
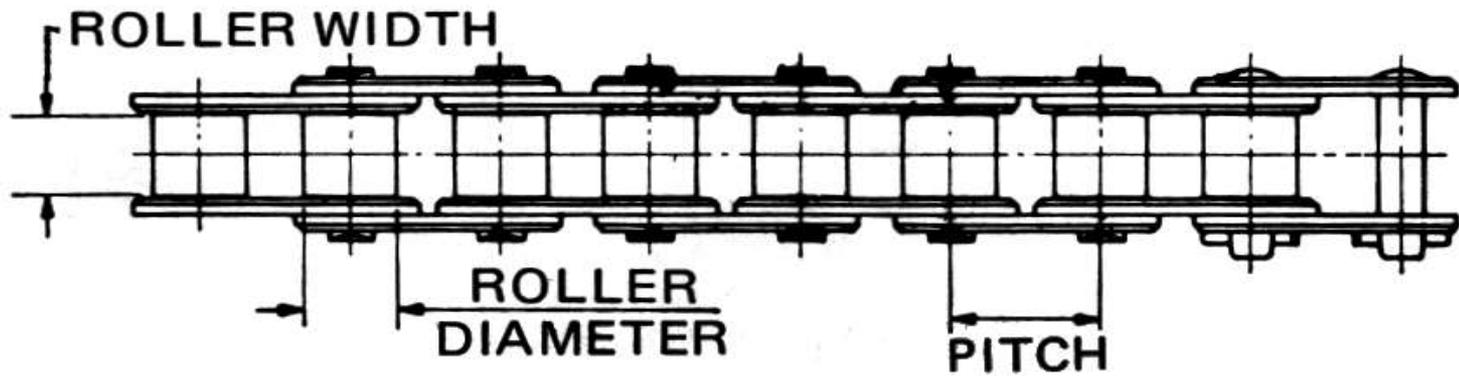
(C) OUTSIDE IDLER PULLEY ON THE TIGHT SIDE OF THE DRIVE



(D) INSIDE IDLER PULLEY ON THE TIGHT SIDE OF THE DRIVE

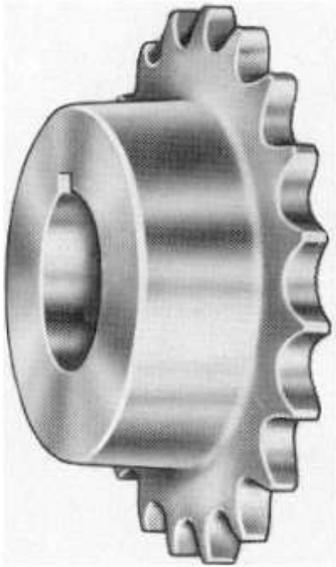
BELTS, CHAINS, AND GEARS

ROLLER CHAIN TERMINOLOGY

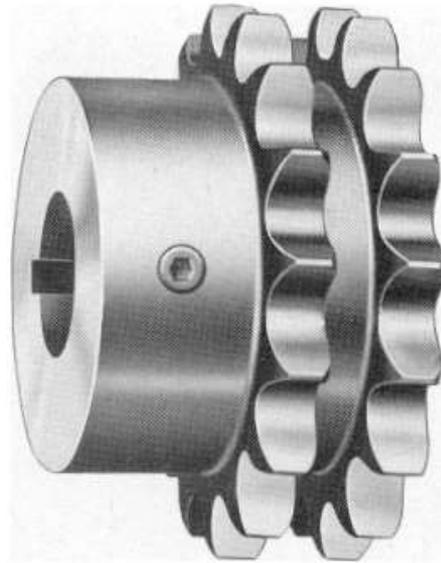


BELTS, CHAINS, AND GEARS

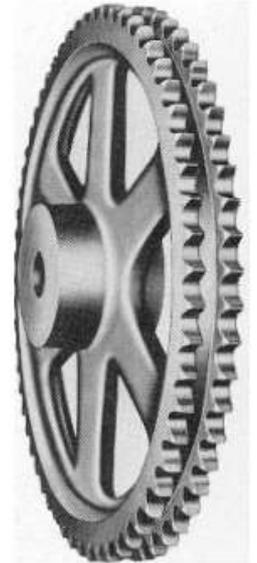
SPROCKETS



**SINGLE
STEEL**



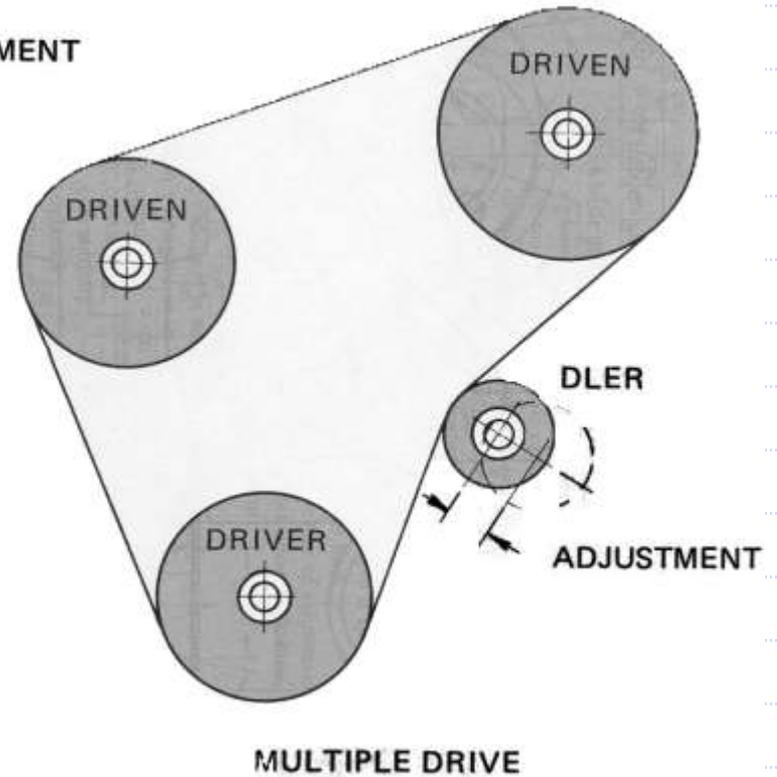
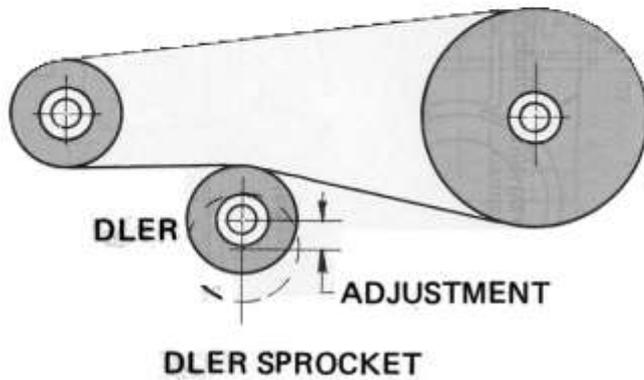
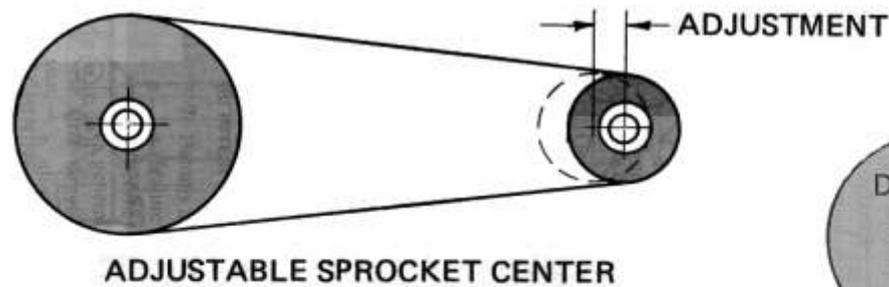
**DOUBLE
STEEL**



**DOUBLE
CAST IRON**

BELTS, CHAINS, AND GEARS

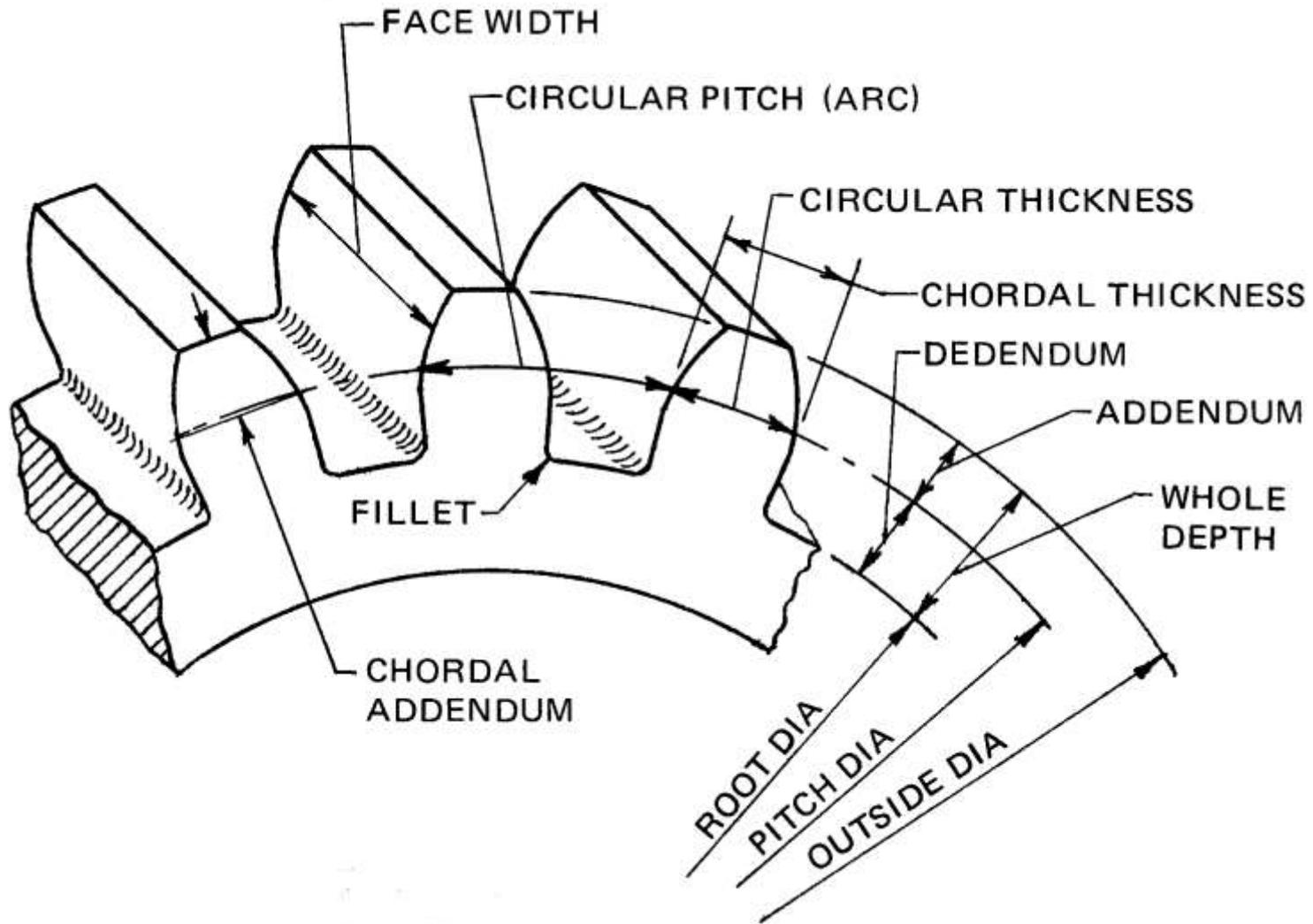
CHAIN DRIVE WITH LONG CENTER DISTANCE



(A) METHOD OF CHAIN ADJUSTMENT

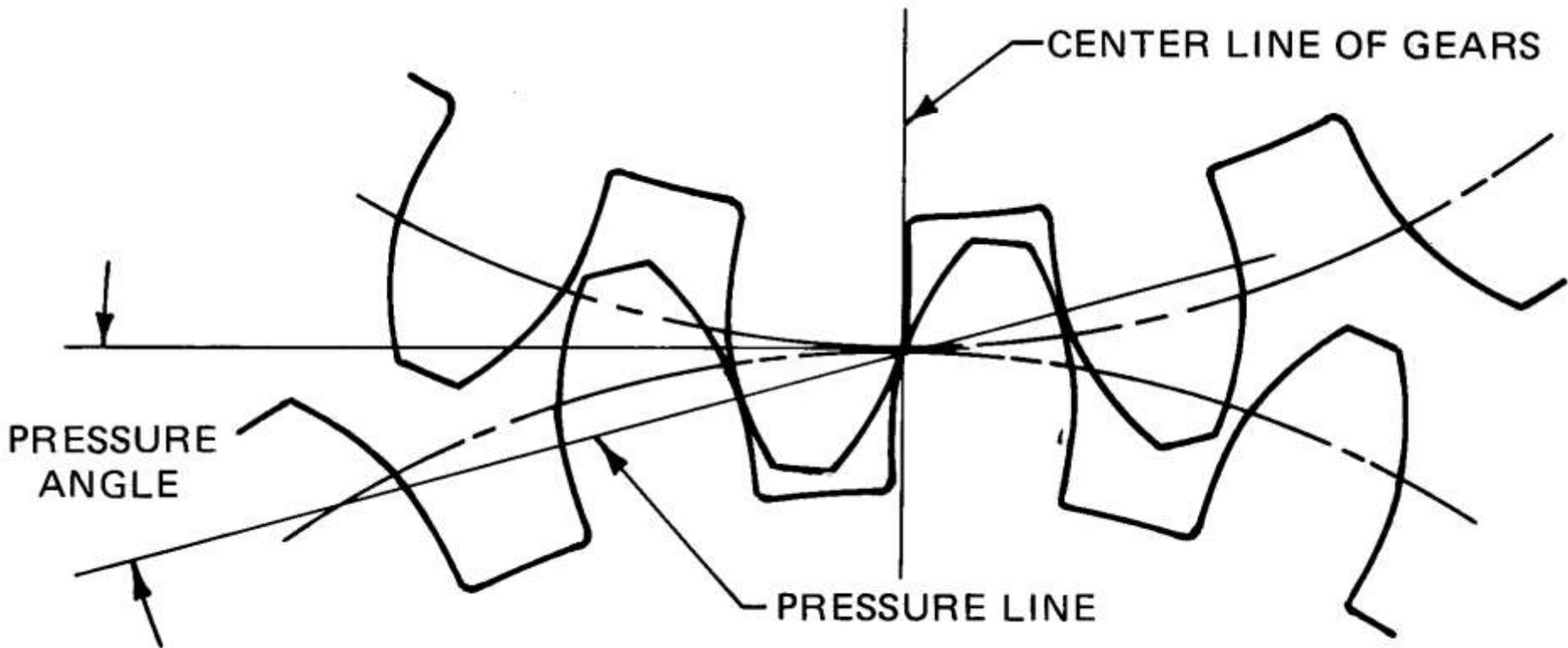
BELTS, CHAINS, AND GEARS

GEAR-TEETH TERMS



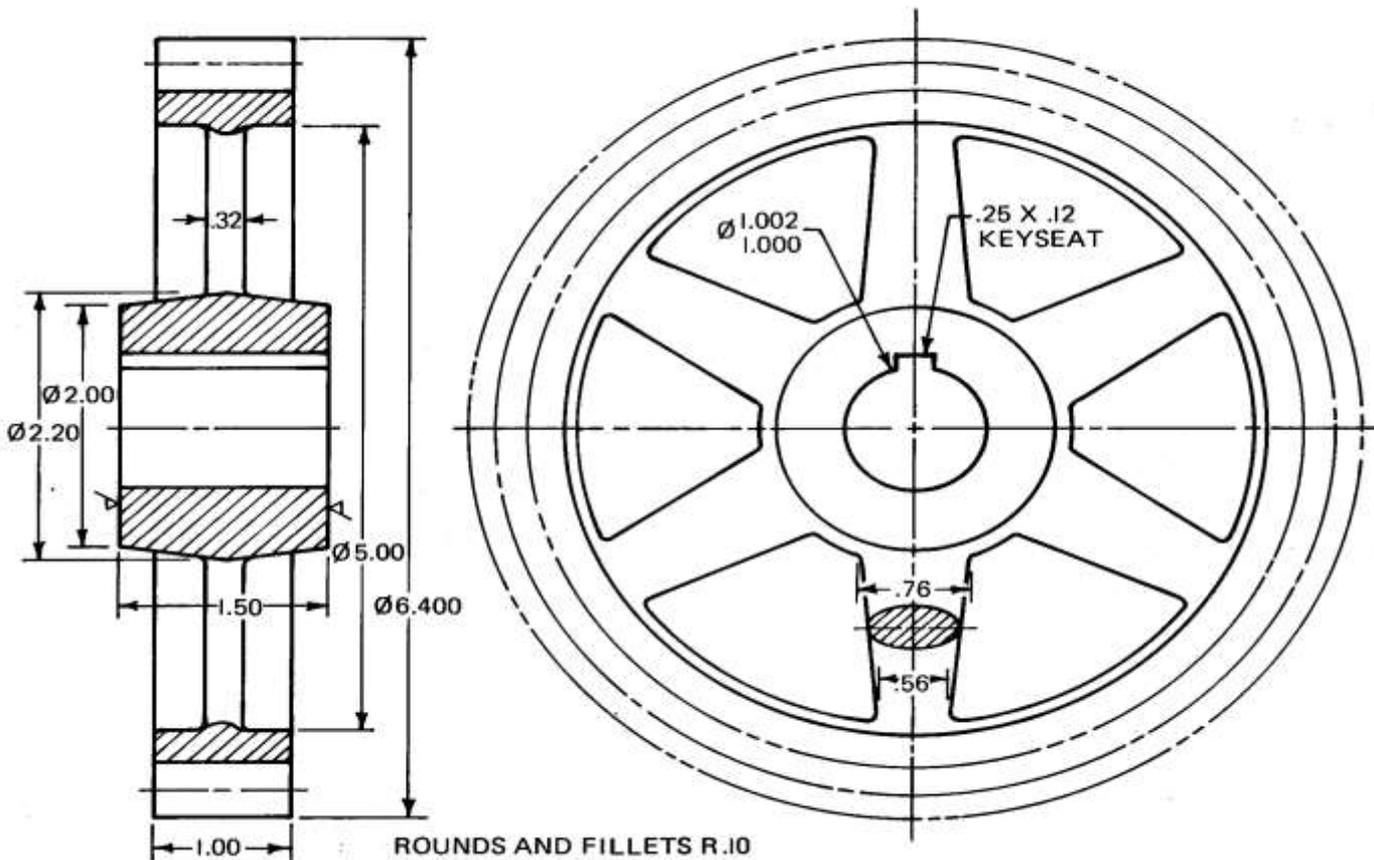
BELTS, CHAINS, AND GEARS

MESHING OF GEAR TEETH



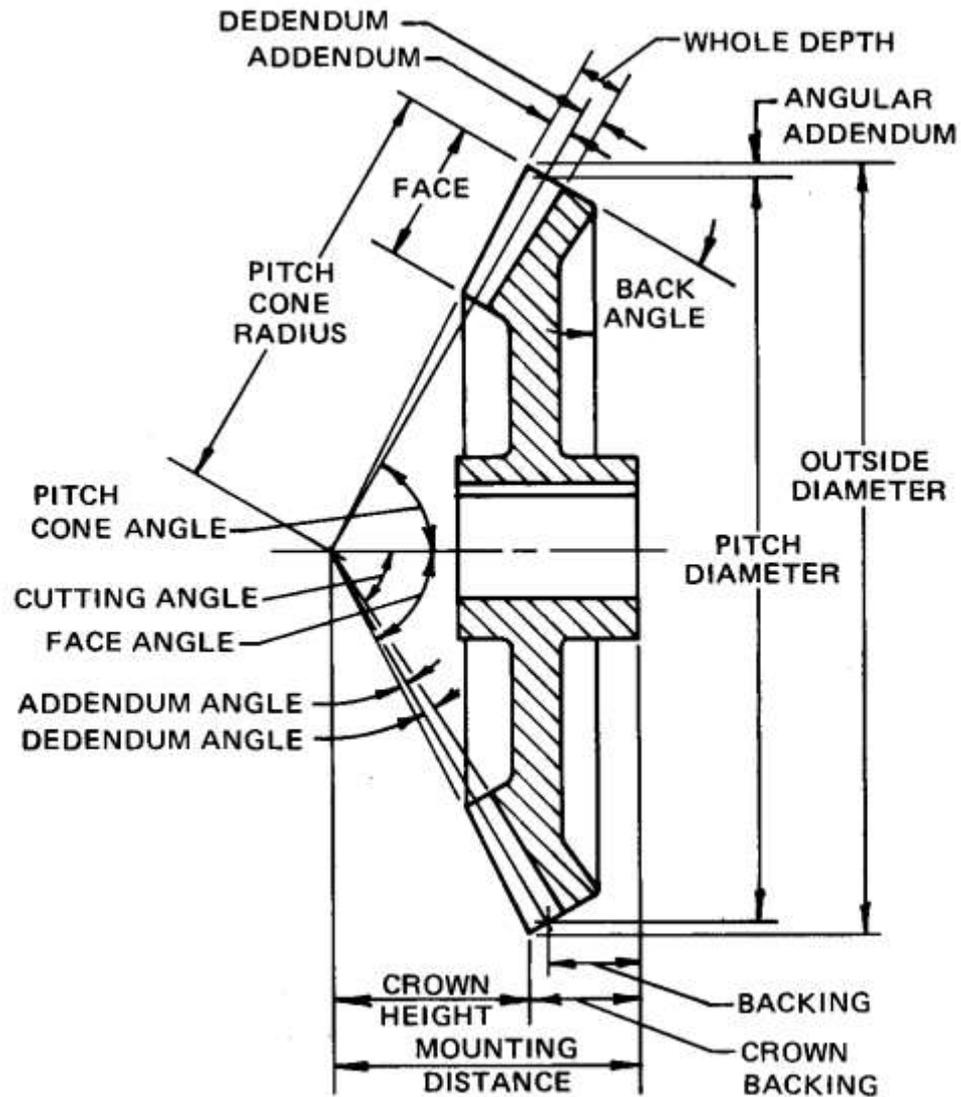
BELTS, CHAINS, AND GEARS

WORKING DRAWING OF A SPUR GEAR



CUTTING DATA	
NUMBER OF TEETH	30
PITCH DIAMETER	6.000
DIAMETRAL PITCH	5
PRESSURE ANGLE	25°
WHOLE DEPTH	.431
CHORDAL ADDENDUM	.204
CHORDAL THICKNESS	.300
CIRCULAR THICKNESS	.314
WORKING DEPTH	.400

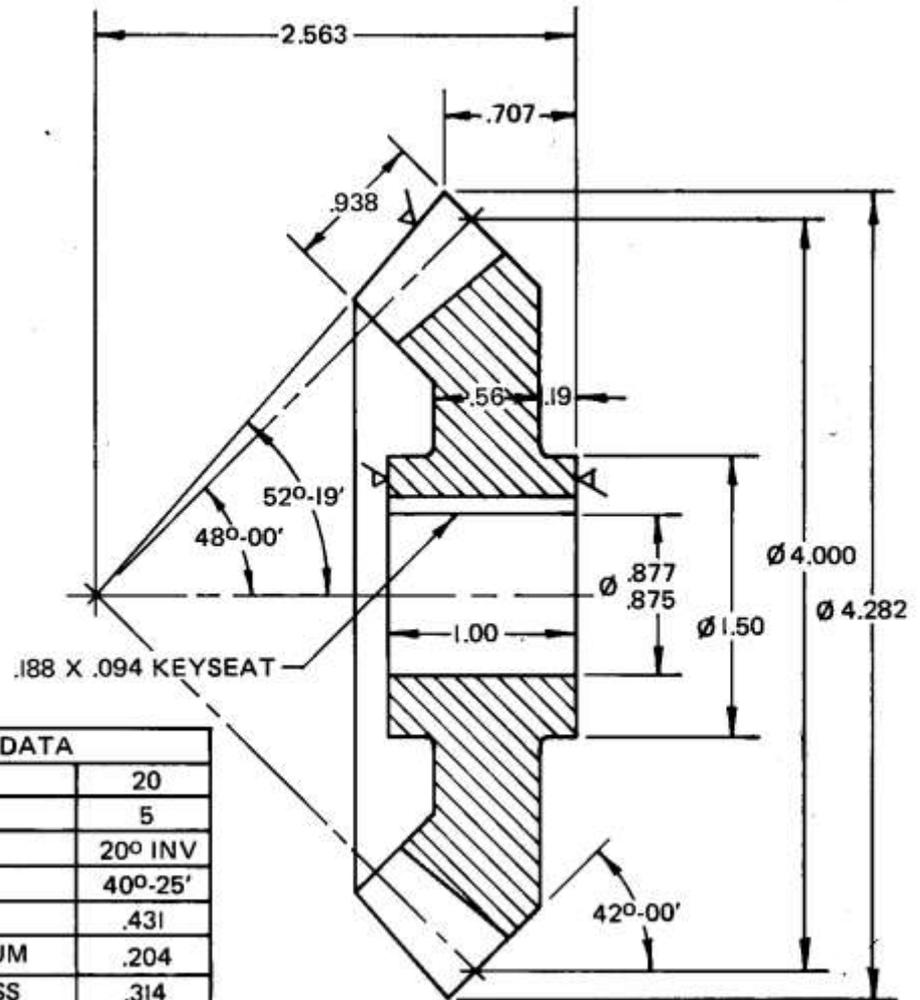
BELTS, CHAINS, AND GEARS



**BEVEL GEAR
NOMENCLATURE**

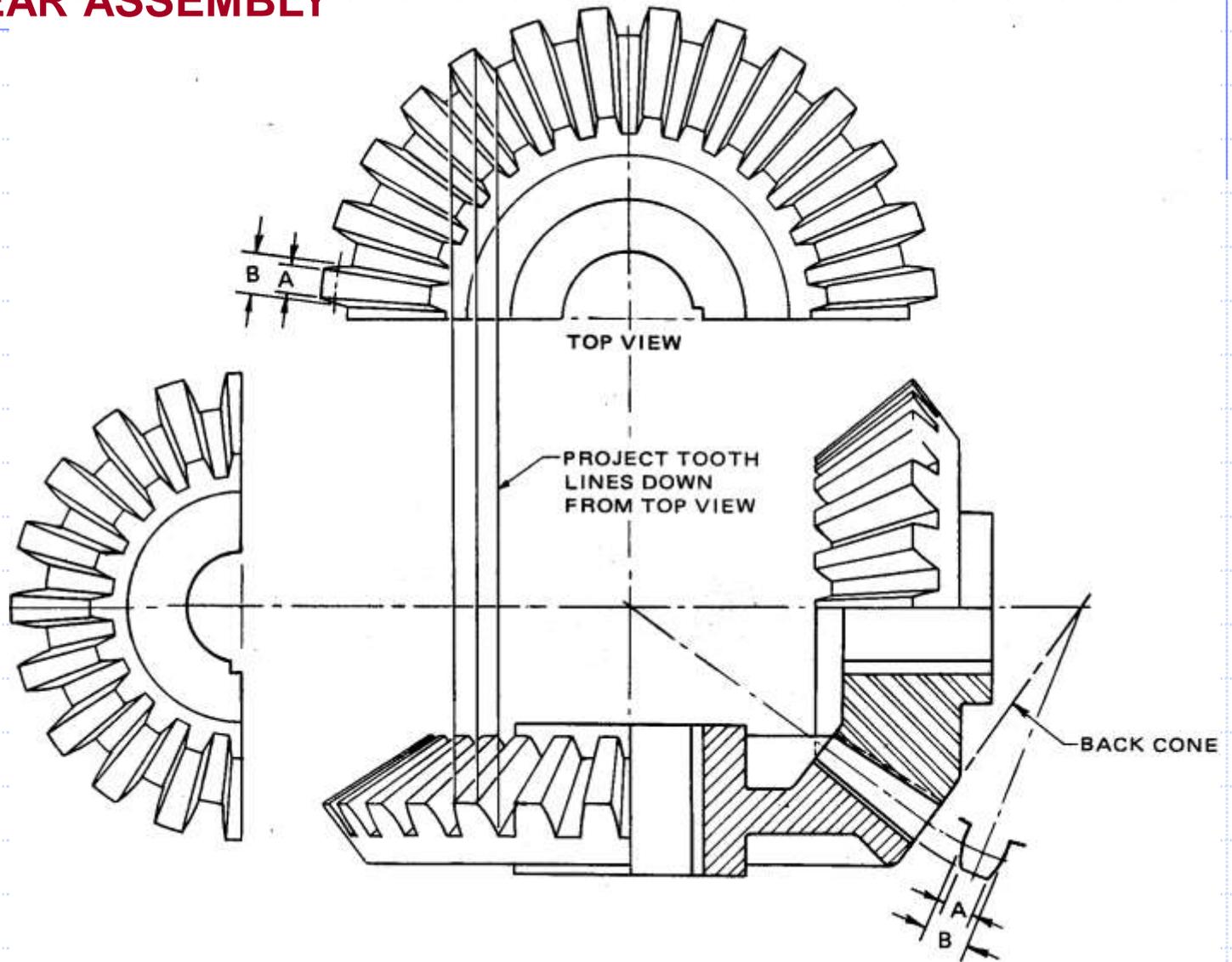
BELTS, CHAINS, AND GEARS

WORKING DRAWING OF A BEVEL GEAR



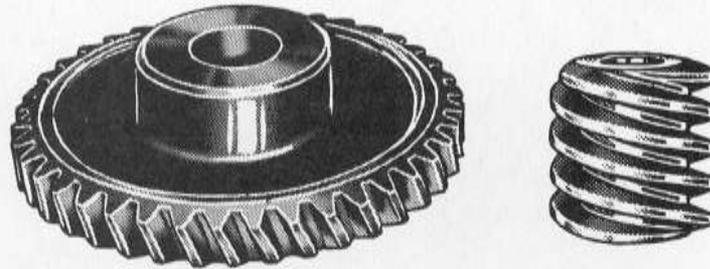
BELTS, CHAINS, AND GEARS

BEVEL GEAR ASSEMBLY



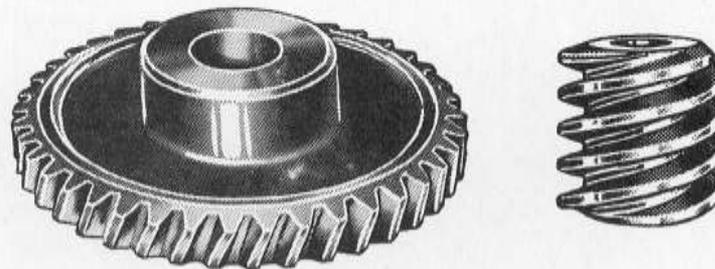
BELTS, CHAINS, AND GEARS

WORM GEARS AND WORMS



THREADS OF LEFT HAND LEAN TO THE LEFT WHEN STANDING ON EITHER END

(A) LEFT-HAND WORM GEAR AND WORM



THREADS OF RIGHT HAND LEAN TO THE RIGHT WHEN STANDING ON EITHER END

(B) RIGHT-HAND WORM GEAR AND WORM

BELTS, CHAINS, AND GEARS

WORKING DRAWING OF A WORM AND WORM GEAR

CUTTING DATA	
NO. OF TEETH	36
ADDENDUM	.159
WHOLE DEPTH	.343
NO. OF THREADS	2
PITCH (AXIAL)	.500
PRESSURE ANGLE	20°
LEAD ANGLE	7°-53'
LEAD-RH	

CUTTING DATA	
NO. OF THREADS	2
PITCH	.500
PRESSURE ANGLE	20°
LEAD ANGLE	7°-53'
LEAD-RH	
WHOLE DEPTH	.343
ADDENDUM	.159

