Nomenclature

Symbols			
t	Time/tip/thickness	N	Extensive property/speed
$\dot{m}$	Mass flow rate	ρ	Density/velocity ratio
V	Volume	C	Velocity/Coefficient
A	Cross sectional/flow area	η	Efficiency/Intensive property
r	Radius/pressure ratio	B	Width
F	Force or Thrust	p	Pressure/number of poles/pitch
g	Acceleration due to gravity	Z	Datum head, i.e. height from a reference
T	Temperature/Torque	R	Reaction
e	Specific energy	E	Total energy
$\dot{Q}$	Heat transfer rate	$\dot{W}$	Work transfer rate
s	Entropy	u	Specific internal energy
v	Specific volume	h	Specific enthalpy
f	Friction factor/frequency	c	Specific heat
γ	Ratio of specific heats/specific weight	M	Mach number/moment of momentum/ margin
w	Specific work	P	Power
H	Head	I	Rothalpy
α	Absolute flow angle	β	Relative flow angle
ω	Angular velocity	z	Number of blades
s	Slip factor/Thoma's cavitation parameter	R	Degree of reaction
l	Length	D	Diameter
m	Number of primary dimensions/jet ratio	μ	Viscosity
Q	Discharge or volume flow rate	a	Velocity of sound/cross sectional area of jet
R	Characteristic gas constant	k	Blade friction coefficient
φ	Flow coefficient	Ψ	Stage pressure coefficient/blade loading coefficient or temperature drop coefficient

λ	Power coefficient	θ	Temperature ratio/angle of deflection
q	Heat transfer per kg	ε	Heat exchanger effectiveness
x	Fraction of the total arc of nozzle/ dryness fraction	o	Minimum opening of flow
W	Weight/work	L	Length of stroke/length
n	Number of stages/number of strokes	S	Slip
N_{sh}	Non dimensional specific speed		
Subscripts			
0	Stagnation, no load		
1	Inlet	2	Outlet
t	Tangential/tip/turbine	h	Hub
s	Isentropic/specific/stage/static/suction/ shaft/system/slip	CV	Control volume
f	Flow/fan/frictional	B	Body
S	Surface/Supplied	i	Internal
e	Euler/external/exit	o	outer/overall
w	Whirl/water/wasted	b	Blade or vane
r	Relative/ratio/runaway	rw	Relative whirl
th	Theoretical/ideal	a	Axial/actual/atmospheric/air
P	Power	H	Head
Q	Flow or capacity or discharge	c	Critical/compressor/casing/circulation/ coupling
v	Volumetric/vapour	mano	Manometric
h	Hydraulic	m	Mechanical/model/manometric
o	Overall	tt	Total-to-total
ts	Total to static	ss	Static-to-static
p	Polytropic/pump/prototype/pressure end/constant pressure		
u	Unit	g	Gross
n	Nozzle	sn	Nozzle setting
3	Draft tube exit	fr	Friction in runner
sy	Synchronous	v	Velocity
ln	Losses in the nozzle	lb	Losses in the blades or buckets
d	Delivery/draft/drive/discharge/diffuser/ diffusion	le	Losses at exit
max	Maximum	min	Minimum
D	Diagram or blading/Drag	in	Entry/inlet

L	Lift	*q*	Change from normal discharge
l	Losses/leakage	*l*	First
II	Second	opt	Optimum
R	Rejected	*fb*	Fixed blades
mb	Moving blades	*co*	Carry over
nb	Nozzle and Blade	*tn*	Nozzle thickness
tb	Blade thickness	*T*	Torque convertor/torque
Abbreviations			
NPSHA	Net positive suction head available	*NPSHR*	Net positive suction head required
WG	Water gauge	R_e	Reynolds number
RF	Reheat factor		