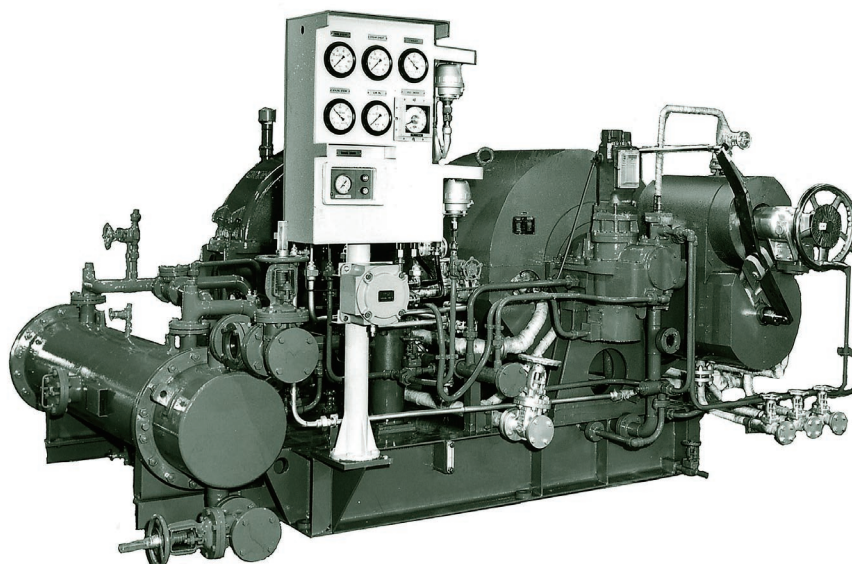


# Curtis two-stage (with reduction gear) STEAM TURBINES

# SHINKO DL.DLG

## ■ APPLICATIONS

Generators  
Compressors  
Pumps  
Others



## ■ SPECIFICATIONS

Max. output ..... 5000 kW  
Max. exhaust steam pressure .. 1.0 MPaG  
Gland seal ..... Labyrinth packing  
Lubrication system ..... Forced lubrication

## ■ GENERAL CHARACTERISTICS

Item	Model	DL 61	DL 62	DL 61A	DL 62A
Max. output	(kW)	3000	5000	3000	5000
Max. speed	(rpm)	7000			
Direction of rotation		CW facing turbine toward driven machine			
Max. inlet steam pressure	(MPaG)	6.2			
Max. inlet steam temperature	(°C)	510			
Max. exhaust steam pressure	(MPaG)	0.5		1.0	
Steam inlet bore	(mm)	150	250	150	250
Steam exhaust bore	(mm)	300	400	300	400
Lubrication system		Forced lubrication			
Main LO pump	(m <sup>3</sup> /h)	5			
Aux. LO pump	(m <sup>3</sup> /h)	5			
Governor		Woodward UG or PG			
Hand nozzle valve		Available according to requirement			
Weight (turbine proper)	(kg)	2600	4000	2700	4000

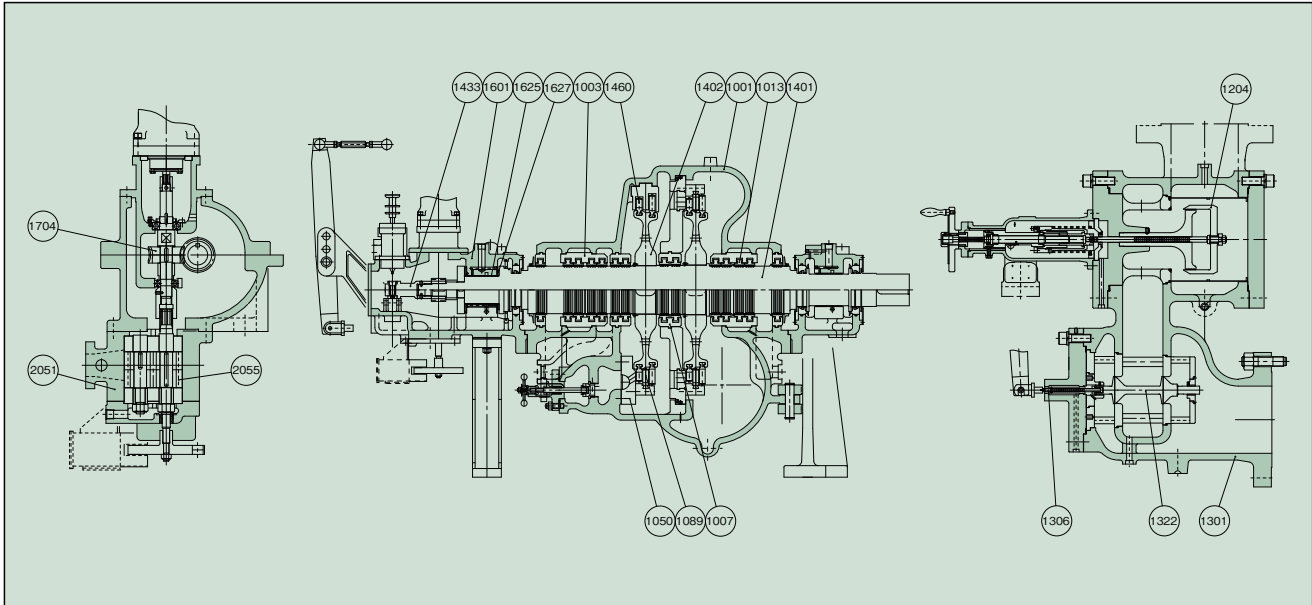
### ● Governor

Max. speed regulation ..... 0.5%, 0 ~ 4 %  
Max. speed variation ..... ±0.25%  
Max. speed rise ..... 7%  
Speed range ..... +5 ~ -30%  
NEMA class ..... D

### ● Emergency Trip Device

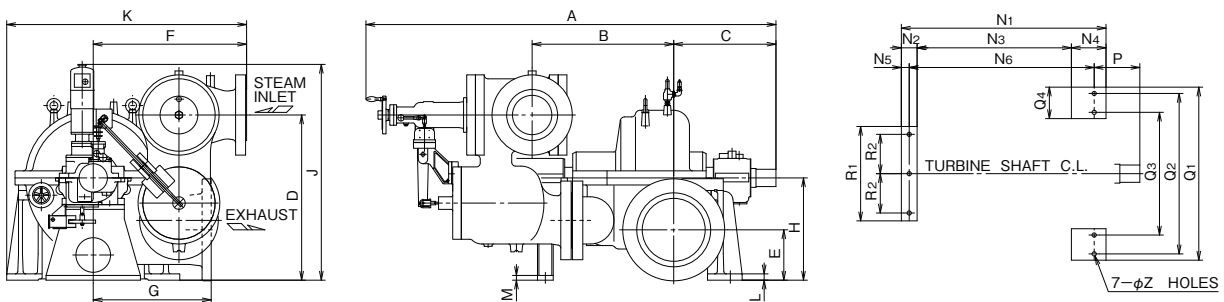
Actuation of overspeed trip ..... 115% of rated speed  
Actuation of low LO pressure trip ..... Below 0.05 MPaG

## DESIGN & MATERIALS



PART NO.	NAME OF PART	MATERIAL		REQ.NO. FOR 1 TURBINE	PART NO.	NAME OF PART	MATERIAL		REQ.NO. FOR 1 TURBINE
		NAME	JIS				NAME	JIS	
1001	TURBINE CASING	CAST STEEL	SCPH2	1SET	1401	TURBINE SHAFT	FORGED STEEL	SF540A	1
1003	PACKING CASE	CARBON STEEL	S35C	1SET	1402	DISC ROTOR	Ni-Cr STEEL	SNC836	1
1007	PACKING CASE	"	"	1SET	1433	OVERSPEED TRIP SHAFT	CARBON STEEL	S35C	1
1013	LABYRINTH PACKING	Ni-Br CASTING		14SETS	1460	MOVING BLADE	STAINLESS STEEL	SUS410J1	1SET
1050	NOZZLE	STAINLESS STEEL	SUS403	1	1601	BEARING HOUSING	CAST IRON	FC200	1SET
1089	STATIONARY BLADE	"	"	1SET	1625	BEARING METAL	WHITE METAL WITH STEEL	WJ2 S25C	1SET
1204	EMERGENCY VALVE	"	SUS420J2	1	1627	THRUST BEARING METAL	"	"	1SET
1301	GOVERNOR VALVE CASING	CAST STEEL	SCPH2	1	1704	WORM WHEEL	PHOSPHOR BRONZE	PBC3	1
1306	VALVE STEM	STELLITE		1	2051	LO PUMP CASING	CAST IRON	FC200	1
1322	GOVERNOR VALVE	STAINLESS STEEL	SUS420J2	1	2055	PUMPING GEAR	CARBON STEEL	S45C	1SET

## OUTLINE DIMENSIONS



Dimensions : mm

Model	A	B	C	D	E	F	G	H	J	K	L	M	N <sub>1</sub>	N <sub>2</sub>	N <sub>3</sub>	N <sub>4</sub>	N <sub>5</sub>	N <sub>6</sub>	P	Q <sub>1</sub>	Q <sub>2</sub>	Q <sub>3</sub>	Q <sub>4</sub>	R <sub>1</sub>	R <sub>2</sub>	Z
DL 61	2392	875	580	840	365	770	720	650	1360	1320	40	30	1233	100	913	220	50	1108	230	1100	1020	780	200	600	250	27
DL 62	2607	900	650	1050	320	980	750	650	1360	1530	40	30	1301	100	981	220	50	1176	290	1100	1020	780	200	600	250	27
DL 61A	2442	875	630	840	365	770	720	650	1360	1320	40	30	1283	100	963	220	50	1158	280	1100	1020	780	200	600	250	27
DL 62A	2607	900	650	1050	320	980	750	650	1360	1530	40	30	1301	100	981	220	50	1176	290	1100	1020	780	200	600	250	27

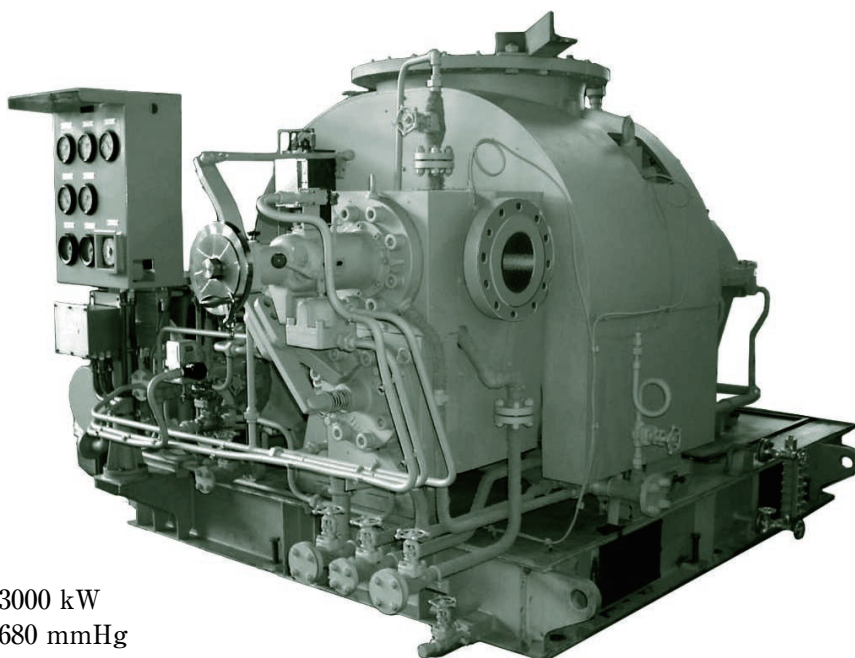
**SHINKO IND.LTD.**

# Curtis two-stage (with reduction gear) STEAM TURBINES

## SHINKO DL-K,DLG-K

### ■ APPLICATIONS

Generators  
Compressors  
Pumps  
Others



### ■ SPECIFICATIONS

Max. output ..... 3000 kW  
Max. exhaust vacuum ..... 680 mmHg  
Gland seal ..... Labyrinth packing  
Lubrication system ..... Forced lubrication

### ■ GENERAL CHARACTERISTICS

Item	Model	DL 61K
Max. output	(kW)	3000
Max. speed	(rpm)	7000
Direction of rotation		CW facing turbine toward driven machine
Max. inlet steam pressure	(MPaG)	6.2
Max. inlet steam temperature	(°C)	510
Max. exhaust vacuum	(mmHg)	680
Steam inlet bore	(mm)	150
Steam exhaust bore	(mm)	750
Lubrication system		Forced lubrication
Main LO pump	(m <sup>3</sup> /h)	5
Aux. LO pump	(m <sup>3</sup> /h)	5
Governor		Woodward UG or PG
Hand nozzle valve		Available according to requirement
Weight (turbine proper)	(kg)	3300

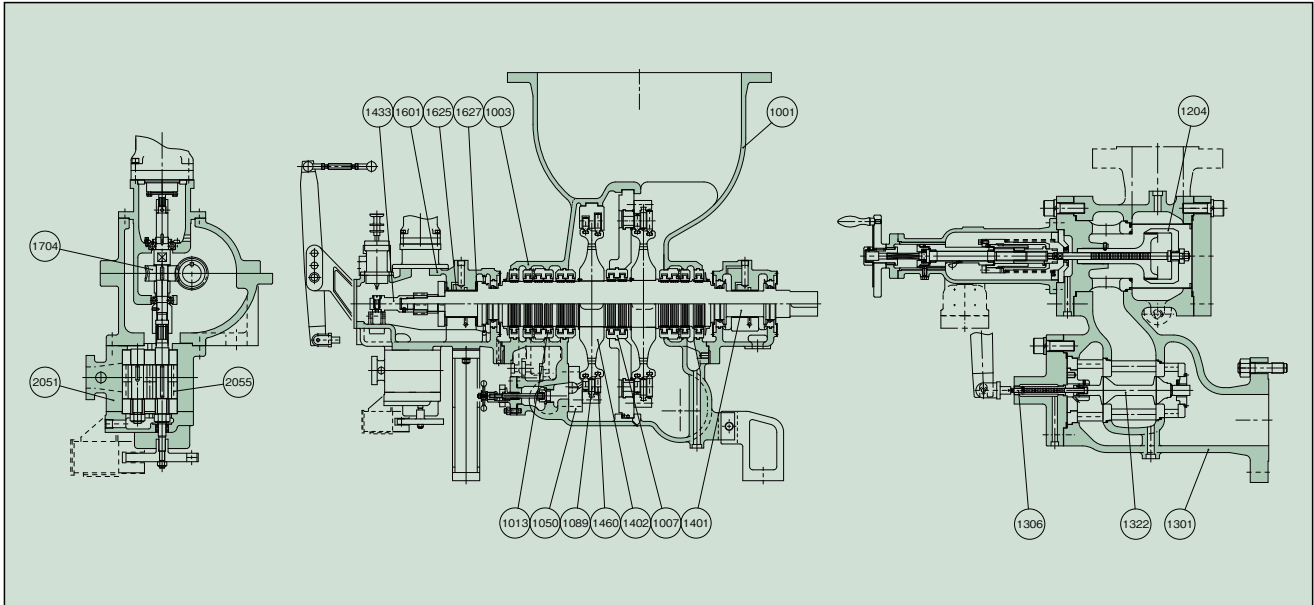
#### ● Governor

Max. speed regulation ..... 0.5%, 0 ~ 4%  
Max. speed variation ..... ±0.25%  
Max. speed rise ..... 7%  
Speed range ..... +5 ~ -30%  
NEMA class ..... D

#### ● Emergency Trip Device

Actuation of overspeed trip ..... 115% of rated speed  
Actuation of low LO pressure trip ..... Below 0.05 MPaG

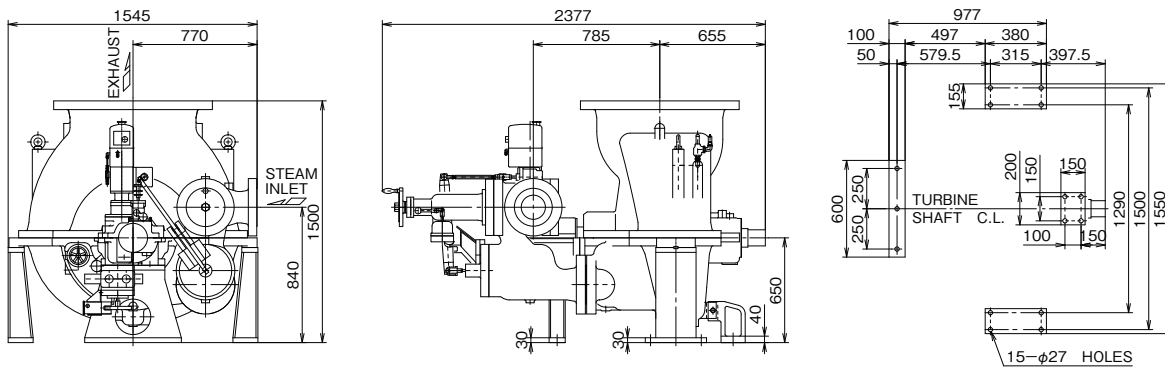
## DESIGN & MATERIALS



PART NO.	NAME OF PART	MATERIAL		REQ.NO. FOR 1 TURBINE	PART NO.	NAME OF PART	MATERIAL		REQ.NO. FOR 1 TURBINE
		NAME	JIS				NAME	JIS	
1001	TURBINE CASING	CAST STEEL	SCPH2	1SET	1401	TURBINE SHAFT	FORGED STEEL	SF540A	1
1003	PACKING CASE	CARBON STEEL	S35C	1SET	1402	DISC ROTOR	Ni-Cr STEEL	SNC836	2
1007	PACKING CASE	"	"	1SET	1433	OVERSPEED TRIP SHAFT	CARBON STEEL	S35C	1
1013	LABYRINTH PACKING	Ni-Br CASTING		12SETS	1460	MOVING BLADE	STAINLESS STEEL	SUS410J1	1SET
1050	NOZZLE	STAINLESS STEEL	SUS403	1	1601	BEARING HOUSING	CAST IRON	FC200	1SET
1089	STATIONARY BLADE	"	"	1SET	1625	BEARING METAL	WHITE METAL WITH STEEL	WJ2 S25C	1SET
1204	EMERGENCY VALVE	"	SUS420J2	1	1627	THRUST BEARING METAL	"	"	1SET
1301	GOVERNOR VALVE CASING	CAST STEEL	SCPH2	1	1704	WORM WHEEL	PHOSPHOR BRONZE	PBC3	1
1306	VALVE STEM	STELLITE		1	2051	LO PUMP CASING	CAST IRON	FC200	1
1322	GOVERNOR VALVE	STAINLESS STEEL	SUS420J2	1	2055	PUMPING GEAR	CARBON STEEL	S45C	1SET

## OUTLINE DIMENSIONS

Dimensions : mm



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