



HORIZONTAL SPLIT CASE PUMPS MULTISTAGE SINGLE SUCTION Type TU, TUT

Sample Specifications for Types TU and TUT Pumps

GENERAL: Pump shall be of the _____ stage horizontally split case type with suction and discharge connections located on opposite sides in the lower half casing, allowing removal of the rotating element without disturbing the pipe connections. The pump shall deliver a design capacity of _____ GPM at a total head of _____ feet and NPSH available of _____ feet. The speed of the unit shall not exceed _____ RPM. The pump shall have an efficiency of not less than _____ % at specified operating condition.

CASING: The casing shall be of cast iron free from blow holes, sand pockets, and other detrimental defects. Water passageways shall be smooth to permit maximum efficiency. Casing shall be capable of withstanding a hydrostatic test pressure 150% of the maximum pumping pressure under which the pump could operate at the design speed.

IMPELLERS: The impellers shall be made of cast bronze, single suction type. A pump having an equal number of stages shall have an equal number of impellers facing each direction to obtain hydraulic balance. The impellers shall be balanced, keyed to the shaft and fixed in an axial position by shaft sleeves or shaft sleeve nuts.

CASING RINGS: The casing rings shall provide close clearance to permit a minimum of recirculation. Casing rings shall be shouldered in the casing to prevent axial movement and pinned to prevent rotation.

STUFFING BOXES: The pump shall be designed so that first stage pressure plus suction pressure will be the maximum pressure on either stuffing box. Stuffing boxes shall be large and deep and shall hold a minimum of five rows of packing and lantern ring. Packing glands shall be removable to facilitate repacking stuffing boxes. Gland bolts shall be of the swing type.

SHAFT: The shaft shall be carbon steel adequately sized for the loads transmitted. The shaft shall be threaded adjacent to both the first and second stage impeller hubs to allow axial adjustment of the impellers by means of threaded sleeves or sleeve nuts.

SHAFT SLEEVES: The shaft shall be protected through the stuffing box with bronze shaft sleeves. They shall be designed to prevent leakage between the shaft and the shaft sleeve. The shaft sleeve shall be threaded to tighten against the impellers and locked in place with set screws.

BEARINGS: Bearings shall be designed for minimum B-10 life of 20,000 hours. The outboard bearing shall be of the duplex angular contact ball bearing. The inboard bearing shall be a single row radial type ball bearing.

MISCELLANEOUS FITTINGS: Drain connections shall be provided at all low points in the pump volutes as well as at the drip pocket underneath the stuffing box. The volutes and interstage passages shall be provided with air vents for release of air from the casing.

BASE: A steel base with drip rim (optional) of suitable size for mounting pump and driver shall be furnished. Pump and driver shall be carefully aligned and bolted in place prior to factory shipment. (Final alignment will be checked and certified after installation and prior to operation by user.)

COUPLING: A flexible coupling of the _____ type shall be provided. Each pump mounted with a driver shall be equipped with a coupling guard.

HORIZONTAL SPLIT CASE PUMPS
MULTISTAGE SINGLE SUCTION
Type TU 2 Stage
PUMP DATA - ENGLISH



Pump Size & Type	Flanges		Casings							Shaft Diameter in inches through			
	Suction Size x 125 Lb. ANSI Flat Faced	Discharge Size x 250 Lb. ANSI Flat Faced	Nominal Thickness of Casing Inches	Corrosion Allowance Inches ①	Maximum Working Pressure PSI	Maximum Hydrostatic Test Pressure PSI	NPT Size Priming Connection	NPT Size Gauge Connection	NPT Size Casing Drain	Impeller	Bearings	Cplg	Stuffing Box
1.5TU7	2.5	1.5	0.375	0.125	300	450	1/4	1/4	3/8	1.562	1.18	1.125	1.375
2TU8	3	2	0.500	0.125	350	525	1/4	1/4	3/8	1.687	1.37	1.375	1.500
2TU10	3	2	0.625	0.125	350	525	1/4	1/4	3/8	1.687	1.37	1.375	1.500
2TU12	3	2	0.625	0.125	350	525	1/4	1/4	3/8	1.687	1.37	1.375	1.500
3TU10	4	3	0.625	0.125	350	525	1/4	1/4	3/8	1.687	1.37	1.375	1.500
3TU13	4	3	0.625	0.125	300	450	1/4	1/4	3/8	2.062	1.57	1.562	1.875
3TU13.5	4	3	0.625	0.125	300	450	1/4	1/4	3/8	2.062	1.57	1.562	1.875
4TU10	5	4	0.687	0.125	400	600	1/4	1/4	3/8	2.062	1.57	1.562	1.875
4TU14	5	4	0.687	0.125	300	450	3/4	1/4	3/8	2.062	1.77	1.750	1.875
5TU13B	6	5	0.750	0.125	400	600	2-1/2	1/4	3/8	2.687	2.36	2.250	2.500
5TU15	6	5	0.750	0.125	300	450	2-1/2	1/4	1/2	2.437	2.16	2.000	2.250
6TU16B	8	6	0.750	0.125	300	450	2-1/2	1/4	1/2	2.687	2.36	2.250	2.500
8TU16	10	8	0.750	0.125	335	450	2-1/2	1/4	1/2	3.375	2.75	2.750	3.000
8TU16F	10	8	0.750	0.125	335	450	2-1/2	1/4	1/2	3.375	2.75	2.750	3.000
10TU22C	12	10	1.375	0.125	450	600	3/4	1/4	3/4	4.375	3.54	3.500	4.000

Pump Size & Type	Stuffing Box Dimensions in inches								Bearings		Distance Between Bearing Centerlines Inches
	Shaft Sleeve O.D.	Stuffing Box Bore	Stuffing Box Depth	Face to Nearest Obstruction	Size Packing (Square)	Number Rows Packing	Width Lantern Ring	Width Stuffing Box Bushing	Thrust Bearing No.	Radial Bearing No.	
1.5TU7	1.625	2.437	3.500	2.437	0.375	6	0.937	0.187	ND20306DB	ND3306	28.00
2TU8	1.875	2.687	3.500	2.281	0.375	6	0.812	0.187	ND20307DB	ND3307	30.50
2TU10	1.875	2.687	3.500	2.281	0.375	6	0.812	0.187	ND20307DB	ND3307	31.25
2TU12	1.875	2.687	3.500	2.281	0.375	6	0.812	0.187	ND20307DB	ND3307	31.25
3TU10	1.875	2.687	3.500	2.281	0.375	6	0.812	0.187	ND20307DB	ND3307	31.25
3TU13	2.250	3.062	3.125	2.687	0.375	5	0.812	0.187	ND20308DB	ND3308	32.50
3TU13.5	2.250	3.062	3.125	2.687	0.375	5	0.812	0.187	ND20308DB	ND3308	32.50
4TU10	2.250	3.062	3.125	2.687	0.375	5	0.812	0.187	ND20308DB	ND3308	32.62
4TU14	2.250	3.062	3.500	2.250	0.375	6	0.812	0.187	ND20309DB	ND3309	35.50
5TU13B	3.125	4.375	5.250	3.187	0.625	6	1.000	0.250	ND20312DB	ND3312	43.75
5TU15	2.812	3.812	4.250	2.656	0.500	5	1.162	0.250	ND20311DB	ND3311	39.75
6TU16B	3.125	4.375	5.250	3.187	0.625	5	1.000	0.250	ND20312DB	ND3312	49.00
8TU16	3.500	4.750	5.250	4.625	0.625	6	0.875	0.250	ND20314DB	ND3314	57.00
8TU16F	3.500	4.750	5.250	4.625	0.625	6	0.875	0.250	ND20314DB	ND3314	57.00
10TU22C	4.750	6.062	6.000	5.437	0.625	6	1.500	0.250	ND20318DB	ND3318	64.00

① Based on 0.125 in. corrosion allowance.

Data Continued on page 3

Subject to change without notice.



**HORIZONTAL SPLIT CASE PUMPS
MULTISTAGE SINGLE SUCTION
Types TU, TUT**

Pump Data - Continued

Pump Size & Type	Number of Gland Bolts and Degrees apart	Gland Bolt Circle in inches	Gland Bolt Dia. in Inches	Gland Bolt Circle in mm	Gland Bolt Dia. in mm
1½TU7	2 @ 180°	4.75	1/2	120.65	12.70
2TU8	2 @ 180°	5.00	1/2	127.00	12.70
2TU10	2 @ 180°	5.00	1/2	127.00	12.70
2TU12	2 @ 180°	5.00	1/2	127.00	12.70
3TU10	2 @ 180°	5.00	1/2	127.00	12.70
3TU13	2 @ 180°	5.25	1/2	133.35	12.70
3TU13½	2 @ 180°	5.25	1/2	133.35	12.70
4TU10	2 @ 180°	5.25	1/2	133.35	12.70
4TU14	2 @ 180°	5.25	1/2	133.35	12.70
5TU13B	2 @ 180°	7.50	5/8	190.50	15.88
5TU15	2 @ 180°	6.50	5/8	165.10	15.88
6TU16B	2 @ 180°	7.50	5/8	190.50	15.88
8TU16	2 @ 180°	8.25	5/8	209.55	15.88
8TU16F	2 @ 180°	8.25	5/8	209.55	15.88
10TU22C	2 @ 180°	9.75	3/4	247.65	19.05
1½TUT7-3	2 @ 180°	4.75	1/2	120.65	12.70
3TUT13	2 @ 180°	5.25	1/2	133.35	12.70
4TUT14	2 @ 180°	5.25	1/2	133.35	12.70
5TUT16B	2 @ 180°	7.50	5/8	190.50	15.88
1½TUT7-4	2 @ 180°	4.75	1/2	120.65	12.70
2TUT8	2 @ 180°	5.00	1/2	127.00	12.70
3TUT9	2 @ 180°	5.25	1/2	133.35	12.70
4TUT10	2 @ 180°	6.50	5/8	165.10	15.88
2TUT9	3 @ 120°	4.50	5/8	114.30	15.88

BLANK



**HORIZONTAL SPLIT CASE PUMPS
MULTISTAGE SINGLE SUCTION
Type TUT 3, 4, 5 Stage**

PUMP DATA - ENGLISH (Continued)

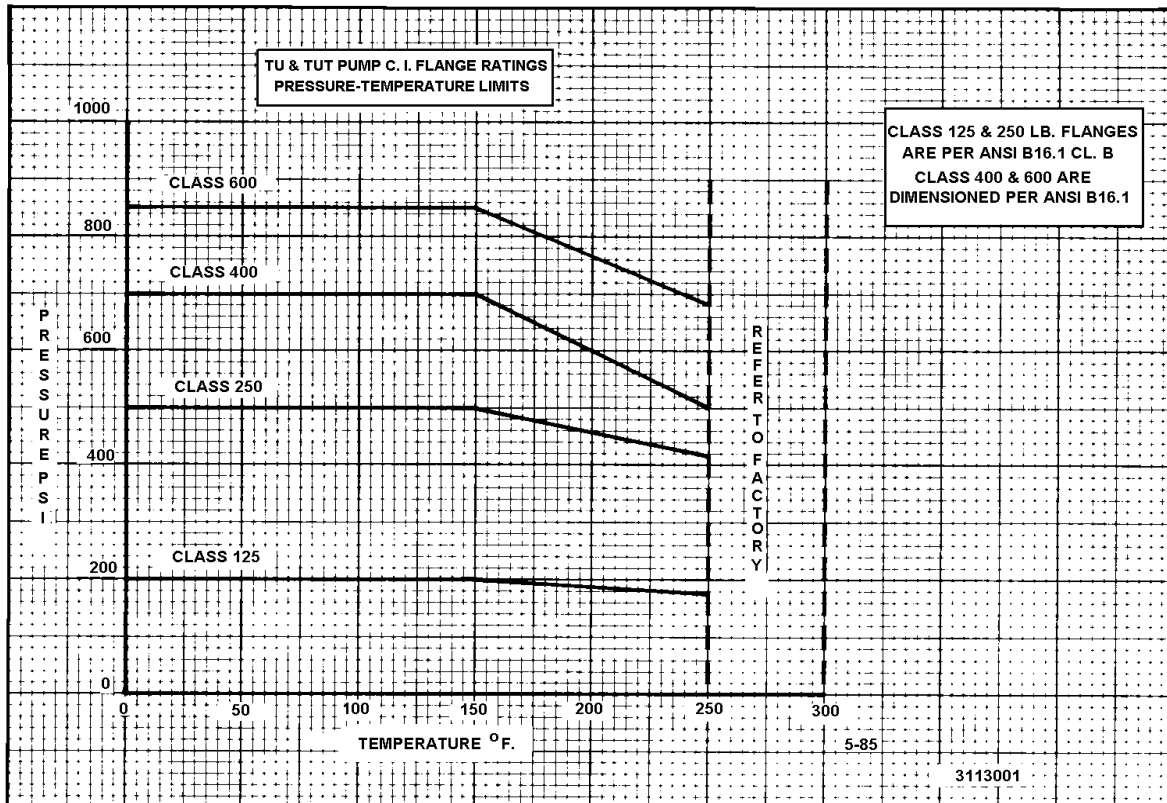
Pump		Flanges		Casing							Shaft Diameter in inches through			
Size & Type	Stg	Suction Size x Lb. ANSI Flat Faced	Discharge Size x Lb. ANSI Flat Faced	Nominal Thickness of Casing Inches	Maximum Corrosion Allowance Inches	Maximum Working Pressure PSI ①	Maximum Hydrostatic Test Pressure PSI	NPT Size Priming Connection	NPT Size Gauge Connection	NPT Casing Drain	Impeller	Brgs.	Cplg.	Stuffing Box
1.5TUT7	3	2.5 x 125	1.5 x 250	0.375	0.125	350	525	1/4	1/4	3/8	1.562	1.18	1.125	1.375
3TUT13	3	4 x 125	3 x 250	0.625	0.125	350	525	1-1/4	1/4	3/8	2.062	1.77	1.750	1.875
4TUT14	3	5 x 125	4 x 250	0.750	0.125	350	525	2-1/2	1/4	3/8	2.062	1.77	1.750	1.875
5TUT16B	3	6 x 125	5 x 250	0.875	0.125	400	600	2-1/2	1/4	1/2	2.687	2.36	2.250	2.500
1.5TUT7	4	2.5 x 125	1.5 x 400	0.375	0.125	400	600	1/4	1/4	3/8	1.562	1.18	1.125	1.375
2TUT8	4	3 x 125	2 x 400	0.500	0.125	500	750	1	1/4	3/8	1.687	1.37	1.375	1.500
3TUT9	4	4 x 125	3 x 400	0.687	0.125	600	900	1	1/4	3/8	2.062	1.77	1.375	1.875
4TUT10	4	5 x 125	4 x 400	0.750	0.125	700	1050	1	1/4	3/8	2.437	2.16	2.000	2.250
2TUT9	5	3 x 250	2 x 600 ②	0.625	0.125	700	1050	1/4	1/4	3/8	2.062	1.77	1.750	1.875

Pump		Stuffing Box in inches							Bearings		Distance	
Size & Type	Stg	Shaft Sleeve O.D.	Stuffing Box Bore	Stuffing Box Depth	Face to Nearest Obstruction	Size Packing Square	Number Rows of Packing	Width of Lantern Ring	Width of Stuffing Box Bushing	Thrust Bearing No.	Radial Bearing No.	Between Bearing Centerlines in inches
1.5TUT7	3	1.625	2.437	3.500	2.437	0.375	6	0.937	0.187	ND20306DB	ND3306	32.00
3TUT13	3	2.250	3.062	3.500	2.250	0.375	6	0.812	0.187	ND20309DB	ND3309	43.25
4TUT14	3	2.250	3.062	3.500	2.250	0.375	6	0.812	0.187	ND20309DB	ND3309	43.25
5TUT16B	3	3.125	4.375	5.250	3.187	0.625	6	1.000	0.250	ND20312DB	ND3312	51.75
1.5TUT7	4	1.625	2.437	3.500	2.437	0.375	6	0.937	0.187	ND20306DB	ND3306	38.00
2TUT8	4	1.875	2.687	3.500	2.281	0.375	6	0.812	0.187	ND20307DB	ND3307	43.50
3TUT9	4	2.250	3.062	3.500	2.750	0.375	6	0.812	0.187	ND20309DB	ND3309	51.00
4TUT10	4	2.812	3.812	4.250	2.719	0.500	5	1.062	0.250	ND20311DB	ND3311	56.00
2TUT9	5	2.250	3.062	4.125	3.750	0.375	8	0.812	0.250	ND20309DB	ND3309	49.75

① Based on .125 in. corrosion allowance.

② Raised Faced.

TU-TUT Suction & Discharge Flange • Operating Limits • Temperature-Pressure



**HORIZONTAL SPLIT CASE PUMPS
MULTISTAGE SINGLE SUCTION
Type TU 2 Stage**



Peerless Pump Company
Indianapolis, IN 46207-7026

PUMP DATA - METRIC

Pump Size & Type	Flanges ②				Casings							Shaft Diameter in mm through			
	Suction Size x 125 Lb. ANSI Flat Faced		Discharge Size x 250 Lb. ANSI Flat Faced		Nominal Thickness of Casing mm	Corrosion Allowance mm ①	Maximum Working Pressure Bars ①	Maximum Hydrostatic Test Pressure Bars	NPT Size Priming Connection	NPT Size Gauge Connection ③	NPT Size Casing Drain ③	Impeller	Br gs	Cplg	Stuffing Box
	In.	mm	In.	mm											
1.5TU7	2.5	63.5	1.5	38.1	9.52	3.17	20.67	31.00	1/4	1/4	3/8	39.69	30	28.57	34.92
2TU8	3	76.2	2	50.8	12.70	3.17	24.11	36.17	1/4	1/4	3/8	42.86	35	34.92	38.10
2TU10	3	76.2	2	50.8	15.87	3.17	24.11	36.17	1/4	1/4	3/8	42.86	35	34.92	38.10
2TU12	3	76.2	2	50.8	15.87	3.17	24.11	36.17	1/4	1/4	3/8	42.86	35	34.92	38.10
3TU10	4	101.6	3	76.2	15.87	3.17	24.11	36.17	1/4	1/4	3/8	42.86	35	34.92	38.10
3TU13	4	101.6	3	76.2	15.87	3.17	20.67	31.00	1/4	1/4	3/8	52.39	40	39.69	47.62
3TU13.5	4	101.6	3	76.2	15.87	3.17	20.67	31.00	1/4	1/4	3/8	52.39	40	39.69	47.62
4TU10	5	127.0	4	101.6	17.45	3.17	27.56	41.34	1/4	1/4	3/8	52.39	40	39.69	47.62
4TU14	5	127.0	4	101.6	17.45	3.17	20.67	31.00	3/4	1/4	3/8	52.39	45	44.45	47.62
5TU13B	6	152.4	5	127.0	19.05	3.17	27.56	41.34	2-1/2	1/4	3/8	68.26	60	57.15	63.50
5TU15	6	152.4	5	127.0	19.05	3.17	20.67	31.00	2-1/2	1/4	1/2	61.91	55	50.80	57.15
6TU16B	8	203.2	6	152.4	19.05	3.17	20.67	31.00	2-1/2	1/4	1/2	68.26	60	57.15	63.50
8TU16	10	254.0	8	203.2	19.05	3.17	23.08	31.00	2-1/2	1/4	1/2	85.72	70	69.85	76.20
8TU16F	10	254.0	8	203.2	19.05	3.17	23.08	31.00	2-1/2	1/4	1/2	85.72	70	69.85	76.20
10TU22C	12	304.8	10	254.0	34.92	3.17	31.00	41.34	3/4	1/4	3/4	111.12	90	88.90	101.60

Pump Size & Type	Stuffing Box Dimensions in mm								Bearings		Distance Between Bearing Centerlines mm
	Shaft Sleeve O.D.	Stuffing Box Bore	Stuffing Box Depth	Face to Nearest Obstruction	Size Packing (Square)	Number Rows Packing	Width Lantern Ring	Width Stuffing Box Bushing	Thrust Bearing No.	Radial Bearing No.	
1.5TU7	41.27	61.91	88.90	61.91	9.52	6	23.80	4.76	ND20306DB	ND3306	711.20
2TU8	47.62	68.26	88.90	57.94	9.52	6	20.64	4.76	ND20307DB	ND3307	774.70
2TU10	47.62	68.26	88.90	57.94	9.52	6	20.64	4.76	ND20307DB	ND3307	793.75
2TU12	47.62	68.26	88.90	57.94	9.52	6	20.64	4.76	ND20307DB	ND3307	793.75
3TU10	47.62	68.26	88.90	57.94	9.52	6	20.64	4.76	ND20307DB	ND3307	793.75
3TU13	57.15	77.79	79.37	68.26	9.52	5	20.64	4.76	ND20308DB	ND3308	825.50
3TU13.5	57.15	77.79	79.37	68.26	9.52	5	20.64	4.76	ND20308DB	ND3308	825.50
4TU10	57.15	77.79	79.37	68.26	9.52	5	20.64	4.76	ND20308DB	ND3308	828.67
4TU14	57.15	77.79	88.90	57.15	9.52	6	20.64	4.76	ND20309DB	ND3309	901.70
5TU13B	79.37	111.12	133.35	80.96	15.87	6	25.40	6.35	ND20312DB	ND3312	1111.25
5TU15	71.44	96.84	107.95	67.47	12.70	5	26.99	6.35	ND20311DB	ND3311	1009.65
6TU16B	79.37	111.12	133.35	80.96	15.87	5	25.40	6.35	ND20312DB	ND3312	1239.84
8TU16	88.90	120.65	133.35	117.47	15.87	6	22.22	6.35	ND20314DB	ND3314	1447.80
8TU16F	88.90	120.65	133.35	117.47	15.87	6	22.22	6.35	ND20314DB	ND3314	1447.80
10TU22C	120.65	153.99	152.40	138.11	15.87	6	38.10	6.35	ND20318DB	ND3318	1625.60

① Based on 3.18 mm corrosion allowance.

② ANSI = American National Standards Institute 125 and 250 Lb. flanges per B16.1

③ NPT = National (USA) Pipe Taper Threads



**HORIZONTAL SPLIT CASE PUMPS
MULTISTAGE SINGLE SUCTION
Type TUT 3, 4, 5 Stage**

PUMP DATA - METRIC (Continued)

Pump		Suction Flange ④		Dischg. Flange ④		Casing						Shaft Diameter in mm through				
Size & Type	Stg s	Size x Lb. ANSI Flat Faced	mm	Size x Lb. ANSI Flat Faced	mm	Nom. Thickness of Casing mm	Max. Corrosion Allowance mm	Max. Working Pressure Bars ①	Maximum Hydro. Test Pressure Bars	NPT Size Prime Connection ③	NPT Size Gauge Connection ③	NPT Casing Drain ③	Imp.	Brgs.	Cplg.	Stuff. Box
1.5TUT7	3	2.5 x 125	63.5	1.5 x 250	38.1	9.52	3.17	24.11	36.17	1/4	1/4	3/8	38.77	30	28.57	34.92
3TUT13	3	4 x 125	101.6	3 x 250	76.2	15.87	3.17	24.11	36.17	1-1/4	1/4	3/8	52.39	45	44.45	47.62
4TUT14	3	5 x 125	127.0	4 x 250	101.6	19.05	3.17	24.11	36.17	2-1/2	1/4	3/8	52.39	45	44.45	47.62
5TUT16B	3	6 x 125	152.4	5 x 250	127.0	22.22	3.17	27.56	41.34	2-1/2	1/4	1/2	68.26	60	57.15	63.50
1.5TUT7	4	2.5 x 125	63.5	1.5 x 400	38.1	9.52	3.17	27.56	41.34	1/4	1/4	3/8	39.69	30	28.57	34.92
2TUT8	4	3 x 125	76.2	2 x 400	50.8	12.70	3.17	34.45	51.67	1	1/4	3/8	42.86	35	34.92	38.10
3TUT9	4	4 x 125	101.6	3 x 400	76.2	17.46	3.17	41.34	62.01	1	1/4	3/8	52.39	45	44.45	47.62
4TUT10	4	5 x 125	127.0	4 x 400	101.6	19.05	3.17	48.23	72.34	1	1/4	3/8	61.91	55	50.80	57.15
2TUT9	5	3 x 250	76.2	2 x 600 ②	50.8	15.87	3.17	48.23	72.34	1/4	1/4	3/8	52.37	45	44.45	47.62

Pump		Stuffing Box in mm								Bearings		Distance
Size & Type	Stg s	Shaft Sleeve O.D.	Stuffing Box Bore	Stuffing Box Depth	Face to Nearest Obstruction	Size Packing Square	Number Rows of Packing	Width of Lantern Ring	Width of Stuffing Box Bushing	Thrust Bearing No.	Radial Bearing No.	Between Bearing Centerlines mm
1.5TUT7	3	41.27	61.91	88.90	61.91	9.52	6	23.81	4.76	ND20306DB	ND3306	812.80
3TUT13	3	57.15	77.99	88.90	57.15	9.52	6	20.64	4.76	ND20309DB	ND3309	1098.55
4TUT14	3	57.15	77.99	88.90	57.15	9.52	6	20.64	4.76	ND20309DB	ND3309	1098.55
5TUT16B	3	79.37	111.12	133.35	80.96	15.87	6	25.40	6.35	ND20312DB	ND3312	1314.45
1.5TUT7	4	41.27	61.91	88.90	61.91	9.52	6	23.81	4.76	ND20306DB	ND3306	965.20
2TUT8	4	47.62	68.26	88.90	57.94	9.52	6	20.64	4.76	ND20307DB	ND3307	1104.90
3TUT9	4	57.15	77.79	88.90	69.85	9.52	6	20.64	4.76	ND20309DB	ND3309	1295.40
4TUT10	4	71.44	96.84	107.95	69.06	12.70	5	26.99	6.35	ND20311DB	ND3311	1422.40
2TUT9	5	57.15	77.79	104.77	95.25	9.52	8	20.64	6.35	ND20309DB	ND3309	1263.65

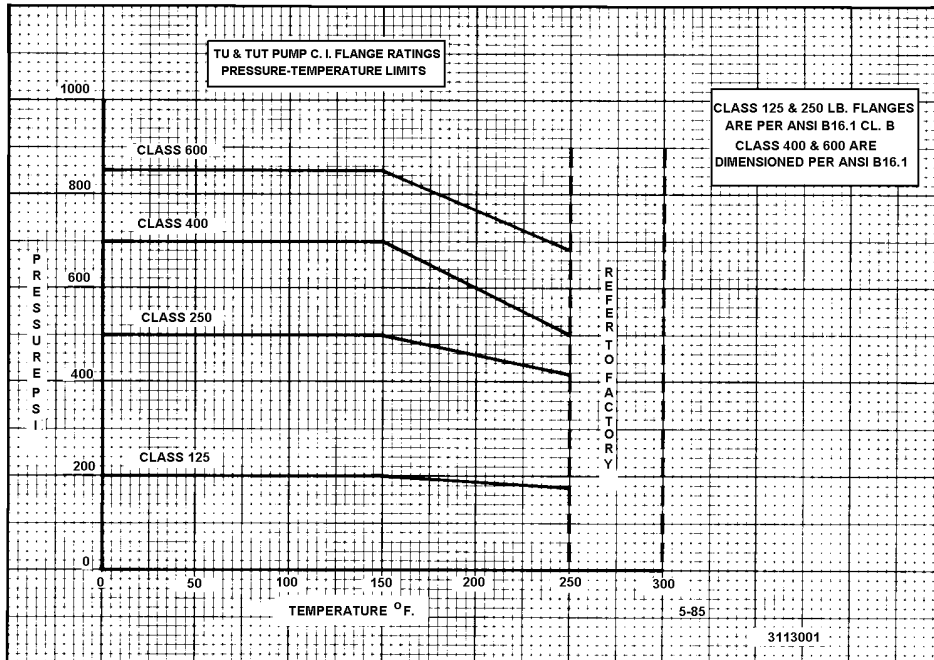
① Based on .125 in. corrosion allowance.

③ NPT = National (USA) Pipe Taper Threads.

② Raised Faced

④ American National Standards Institute 125 and 250 Lb. flanges per B16.1.

TU-TUT Suction & Discharge Flange • Operating Limits • Temperature-Pressure



Subject to change without notice

**HORIZONTAL SPLIT CASE PUMPS
MULTISTAGE SINGLE SUCTION
Type TU 2 Stage**



Peerless Pump Company
Indianapolis, IN 46207-7026

IMPELLER DATA

Pump Size & Type; Impeller Type	Standard Impeller Part No.	Optional Impeller Part No. (with Ring)	Max. Dia. In.	Min. Dia. In	Eye Area In ²	Sphere Size In.	Impeller Diametric Clearance ①
1½TU7-RH	2677910	2672947	7.0	5.5	4.12	.31	.012
1½TU7-LH	2677911	2672948	7.0	5.5	4.12	.31	.012
2TU8 RH	2677908	2662956	8.0	6.0	6.00	.25	.012
2TU8-LH	2677909	2662957	8.0	6.0	6.00	.25	.012
2TU10-RH	2677914	36 2TU10 1	10.0	7.0	8.95	.25	.012
2TU10-LH	2677915	36 2TU10 1	10.0	7.0	8.95	.25	.012
2TU10-RH	2677916	2657688	10.0	6.5	8.93	.31	.012
2TU10-LH	2677917	2657689	10.0	6.5	7.36	.31	.012
2TU12-RH	2677918	2662877	12.0	7.0	4.75	.31	.012
2TU12-LH	2677919	2662878	12.0	7.0	4.75	.31	.012
3TU10-RH	2677922	36 3TU10 1	10.0	6.5	8.93	.37	.012
3TU10-LH	2677923	36 3TU10 2	10.0	6.5	8.93	.37	.012
3TU13 RH	2677924	36 3TU13 5	13.0	9.0	7.15	.25	.012
3TU13-LH	2677925	36 3TU13 6	13.0	9.0	7.15	.25	.012
3TU13-RH	2677926	2657963	13.0	9.0	8.79	.31	.012
3TU13-LH	2677927	2657964	13.0	9.0	8.79	.31	.012
3TU13½-RH	2677924	36 3TU13 5	13.5	9.0	7.15	.25	.012
3TU13½-LH	2677925	36 3TU13 6	13.5	9.0	7.15	.25	.012
3TU13½-RH	2677926	2657963	13.5	9.0	8.79	.31	.012
3TU13½-LH	2677927	2657964	13.5	9.0	8.79	.31	.012
4TU10-RH	2677931	36 4TU10 5	10.0	7.0	18.35	.56	.014
4TU10-LH	2677928	36 4TU10 2	10.0	7.0	16.24	.56	.014
4TU14-RH	2680934	36 4TU14 4	14.0	10.0	13.14	.44	.014
4TU14-LH	2680935	36 4TU14 5	14.0	10.0	13.14	.44	.014
4TU14-RH	2680930	2664132	14.0	9.0	14.42	.62	.014
4TU14-LH	2680931	2664133	14.0	9.0	14.42	.62	.014
5TU13B-RH	2680917	36 5TU13 3	13.0	10.0	22.97	.69	.014
5TU13B-LH	2890916	36 5TU13 2	13.0	10.0	20.36	.56	.014
5TU15-RH	2680918	36 5TU15 1	15.0	10.5	20.52	.56	.014
5TU15-LH	2680919	36 5TU15 2	15.0	10.5	20.52	.56	.014
6TU16B-RH	2680920	36 6TU16 1	16.0	13.0	29.55	.88	.016
6TU16B-LH	2680921	36 6TU16 2	16.0	13.0	29.55	.88	.016
6TU16B-RH	2680922	36 6TU16 3	16.0	13.0	22.86	.75	.016
6TU16B-LH	2680923	36 6TU16 4	16.0	13.0	22.86	.75	.016
8TU16-RH	2680924	36 8TU16 3	16.0	13.0	51.30	1.38	.020
8TU16-LH	2680925	36 8TU16 4	16.0	13.0	51.30	1.38	.020
8TU16F-RH	2680926	36 8TU17 1	17.0	14.0	44.23	1.12	.020
8TU16F-LH	2680927	36 8TU17 2	17.0	14.0	44.23	1.12	.020
10TU22C-RH	2680928	2650129	22.0	16.0	52.57	1.25	.020
10TU22C-LH	2680929	2650159	22.0	16.0	52.57	1.25	.020

① Average (between impeller hub and casing ring)



**HORIZONTAL SPLIT CASE PUMPS
MULTISTAGE SINGLE SUCTION
Type TUT - 3, 4, 5 Stage Pumps**

IMPELLER DATA

Pump Size & Type; Impeller Type	Standard Impeller Part No.	Optional Impeller Part No. (with Ring)	Max. Dia.	Min. Dia.	Eye Area In ²	Size Sphere s	Impeller Diametric Clearance ^①
1½TUT7 3 & 4 Stg RH	2677910	2672947	7	5.5	4.12	.31	.012
1½TUT7 3 & 4 Stg. LH	2677911	2672948	7	5.5	4.12	.31	.012
2TUT8 RH	2677908	2662956	8	6.0	6.00	.25	.012
2TUT8 LH	2677909	2662957	8	6.0	6.00	.25	.012
2TUT9 RH	2680936	36 2TUT9 1	9	6.5	5.63	.31	.025
2TUT9 LH	2680937	36 2TUT9 2	9	6.5	5.63	.31	.025
3TUT9RH	2680957	36 3TUT9 3	9	7.0	11.39	.44	.012
3TUT9 LH	2680958	36 3TUT9 4	9	7.0	11.39	.44	.012
3TUT13 RH	2680940	36 3TUT 7	13	9.0	8.36	.25	.012
3TUT13 LH	2680941	36 3TUT 8	13	9.0	8.36	.25	.012
3TUT13 RH	2680942	2664908	13	9.0	8.90	.31	.012
3TUT13 LH	2677927	2657964	13	9.0	8.90	.31	.012
4TUT10 RH	2680944	2651534	10	8.0	13.22	.50	.014
4TUT10 LH	2680945	2651535	10	8.0	13.22	.50	.014
4TUT10 RH	2680946	2656799	10	8.5	15.90	.62	.014
4TUT10 LH	2680947	2657925	10	8.5	15.90	.62	.014
4TUT14 RH	2683359	36 4TUT 2	14	11.5	10.31	.44	.014
4TUT14 LH	2683360	36 4TUT 3	14	11.5	10.31	.44	.014
4TUT14 RH	2680930	2664132	14	9.0	14.13	.62	.014
4TUT14 LH	2680931	2664133	14	9.0	14.13	.62	.014
5TUT16B RH	2680952 ②	36 5TUT16 1	16	12.0	20.36	.69	.014
5TUT16B LH	2680953 ②	36 5TUT16 2	16	12.0	20.36	.69	.014
5TUT16B RH	2680954 ②	2650659	16	13.0	17.95	.50	.014
5TUT16B LH	2680955 ②	2650660	16	13.0	17.95	.50	.014
5TUT16B RH	2692297	2675910	17	12.0	20.36	.62	.014
5TUT16B LH	2692298	2675911	17	12.0	20.36	.62	.014

① Average (between impeller hub and casing ring)

② Special materials only

**HORIZONTAL SPLIT CASE PUMPS
MULTISTAGE SINGLE STAGE
Types TU, TUT**



Peerless Pump Company
Indianapolis, IN 46207-7026

**MATERIALS OF CONSTRUCTION)
(PACKED PUMPS) ①**

Item No.	Description	Group 1 Standard	Group 2 Optional	Group 3 Optional	Group 4 Optional	Group 5 Optional	Group 6 Optional
1A, 1B	Casing Assembly	Cl. 40 Cast Iron	Cl. 40 Cast Iron	Cl. 40 Cast Iron	Cl. 40 Cast Iron	Cl. 40 Cast Iron	Cl. 40 Cast Iron
2, 2A	RH & LH Impellers	Bronze ②	Bronze ②	Bronze ②	Bronze ②	Bronze ②	Bronze ②
6	Shaft	C1040 Steel ③	AISI 416 S.S.	C1040 Steel ③	AISI 416 S.S.	AISI 303 S.S.	AISI 303 S.S.
7, 7A, 115	Casing Rings	SAE 67 Bronze	SAE 67 Bronze	SAE 67 Bronze	SAE 67 Bronze	SAE 67 Bronze	SAE 67 Bronze
8, 8A	Impeller Rings (Optional)	Bronze ②	Bronze ②	Bronze ②	Bronze ②	Bronze ②	Bronze ②
13	Packing Rings	Crane C1065 TFE	Crane C1065 TFE	Crane 1K w/100 M End Rings	Crane 1K w/100 M End Rings	Crane C1065 TFE	Crane 1K w/100 M End Rings
14	Shaft Sleeves	Bronze ⑤	Bronze ⑤	Hardened 416 S.S.	Hardened 416 S.S.	Bronze ⑤	Hardened 416 S.S.
17	Packing Gland	Bronze ⑥	Bronze ⑥	Bronze ⑥	Bronze ⑥	Bronze ⑥	Bronze ⑥
17B	Gland Bolts	Steel	Steel	Steel	Steel	Steel	Steel
17C	Gland Bolt Nuts	18-8 S.S.	18-8 S.S.	18-8 S.S.	18-8 S.S.	18-8 S.S.	18-8 S.S.
17D	Seal Flange	-	Steel	-	-	Steel	-
20	Shaft Sleeve Nuts	Bronze ②	Bronze ②	AISI 416 S.S.	AISI 416 S.S.	AISI 416 S.S.	AISI 416 S.S.
29	Lantern Ring	TFE ④	TFE ④	TFE ④	TFE ④	TFE ④	TFE ④
31	Inboard Brg. Housing	Cl. 30 Cast Iron	Cl. 30 Cast Iron	Cl. 30 Cast Iron	Cl. 30 Cast Iron	Cl. 30 Cast Iron	Cl. 30 Cast Iron
32	Impeller Keys	Steel	18-8 S.S.	Steel	18-8 S.S.	18-8 S.S.	18-8 S.S.
33	Outboard Brg. Housing	Cl. 30 Cast Iron	Cl. 30 Cast Iron	Cl. 30 Cast Iron	Cl. 30 Cast Iron	Cl. 30 Cast Iron	Cl. 30 Cast Iron
35	Bearing Cover	Cl. 30 Cast Iron	Cl. 30 Cast Iron	Cl. 30 Cast Iron	Cl. 30 Cast Iron	Cl. 30 Cast Iron	Cl. 30 Cast Iron
40	Water Deflectors	Bronze ②	Bronze ②	Bronze ②	Bronze ②	Bronze ②	Bronze ②
56	Balancing Disc	SAE 67 Bronze	SAE 67 Bronze	SAE 67 Bronze	SAE 67 Bronze	SAE 67 Bronze	SAE 67 Bronze

① For Mechanical seal type pumps use Group 2 or 5 construction. Mechanical seals are mounted over shaft, shaft sleeves are not furnished. SAE 40 bronze impeller nuts are furnished in lieu of sleeves. (See page 23 of Section 1420 for details)

② C83600 SAE 40 Bronze or C87500 Silicon Brass or C90300 Modified Bronze

③ 10TU22C standard shaft is AISI 4140 HT steel. 2TUT8 standard shaft is AISI C1141 steel.

④ All pumps except 1-1/2TU7, 1-1/2TUT7 3 & 4 stage; 8TU16, 8TU16F, 10TU22C, 2TUT9 standard lantern ring material is SAE 40 bronze.

⑤ 10TU22C standard shaft sleeves are 420 stainless steel.

⑥ 5TU13B, 6TU16B, and 5TUT16B standard packing gland material is aluminum bronze SAE 68B.



HORIZONTAL SPLIT CASE PUMPS
MULTISTAGE SINGLE STAGE
Types TU, TUT

MATERIALS OF CONSTRUCTION (continued)
(PACKED PUMPS) ①

Item No.	Description	Group 1 Standard	Group 2 Optional	Group 3 Optional	Group 4 Optional	Group 5 Optional	Group 6 Optional
58, 58A	Interstage Sleeves	Bronze ②⑦	Bronze ②⑦	Bronze ②⑦	Bronze ②⑦	Bronze ②⑦	Bronze ②⑦
63	Stuffing Box Bushing	Bronze ②	Bronze ②	Bronze ②	Bronze ②	Bronze ②	Bronze ②
65	Mechanical Seal Seat	⑧	⑧	⑧	⑧	⑧	⑧
69A	Bearing Lock Washer	Steel	Steel	Steel	Steel	Steel	Steel
73A	Casing Gasket	Vegetable Fiber	Vegetable Fiber	Vegetable Fiber	Vegetable Fiber	Vegetable Fiber	Vegetable Fiber
80, 80A	Mechanical Seal Rotary	⑧	⑧	⑧	⑧	⑧	⑧
107	Oil Seal	Steel/Rubber Assembly	Steel/Rubber Assembly	Steel/Rubber Assembly	Steel/Rubber Assembly	Steel/Rubber Assembly	Steel/Rubber Assembly
113, 113A	Interstage Bushing	SAE 67 Bronze	SAE 67 Bronze	SAE 67 Bronze	SAE 67 Bronze	SAE 67 Bronze	SAE 67 Bronze
113A	Interstage Bushing	Cl. 30 Cast Iron ⑨	Cl. 30 Cast Iron ⑨	Cl. 30 Cast Iron ⑨	Cl. 30 Cast Iron ⑨	Cl. 30 Cast Iron ⑨	Cl. 30 Cast Iron ⑨
125	Oil Sight Feed Lubricator	Plastic/Zinc Assembly	Plastic/Zinc Assembly	Plastic/Zinc Assembly	Plastic/Zinc Assembly	Plastic/Zinc Assembly	Plastic/Zinc Assembly
127	Water Seal Piping	Copper w/Brass Fittings	Copper w/Brass Fittings	Copper w/Brass Fittings	Copper w/Brass Fittings	Copper w/Brass Fittings	Copper w/Brass Fittings
-	Casing Bolting	Grade 5 Carbon Steel	Grade 5 Carbon Steel	Grade 5 Carbon Steel	Grade 5 Carbon Steel	Grade 5 Carbon Steel	Grade 5 Carbon Steel
-	Set Screws for items 14, 20, 24, 40A, 80A	18-8 S. S.	18-8 S. S.	18-8 S. S.	18-8 S. S.	18-8 S. S.	18-8 S. S.
-	Dowel Pins for items 7, 7A, 113, 113A	Brass	Brass	Brass	Brass	Brass	Brass
130	Shaft Sleeve O-ring	Buna N Rubber	Buna N Rubber	Buna N Rubber	Buna N Rubber	Buna N Rubber	Buna N Rubber

② C83600 SAE 40 Bronze or C87500 Silicon Brass or C90300 Modified Bronze

⑦ 10TU22C standard interstage sleeve is 420 stainless steel.

⑧ As required by application

⑨ 2TUT9 pump only.

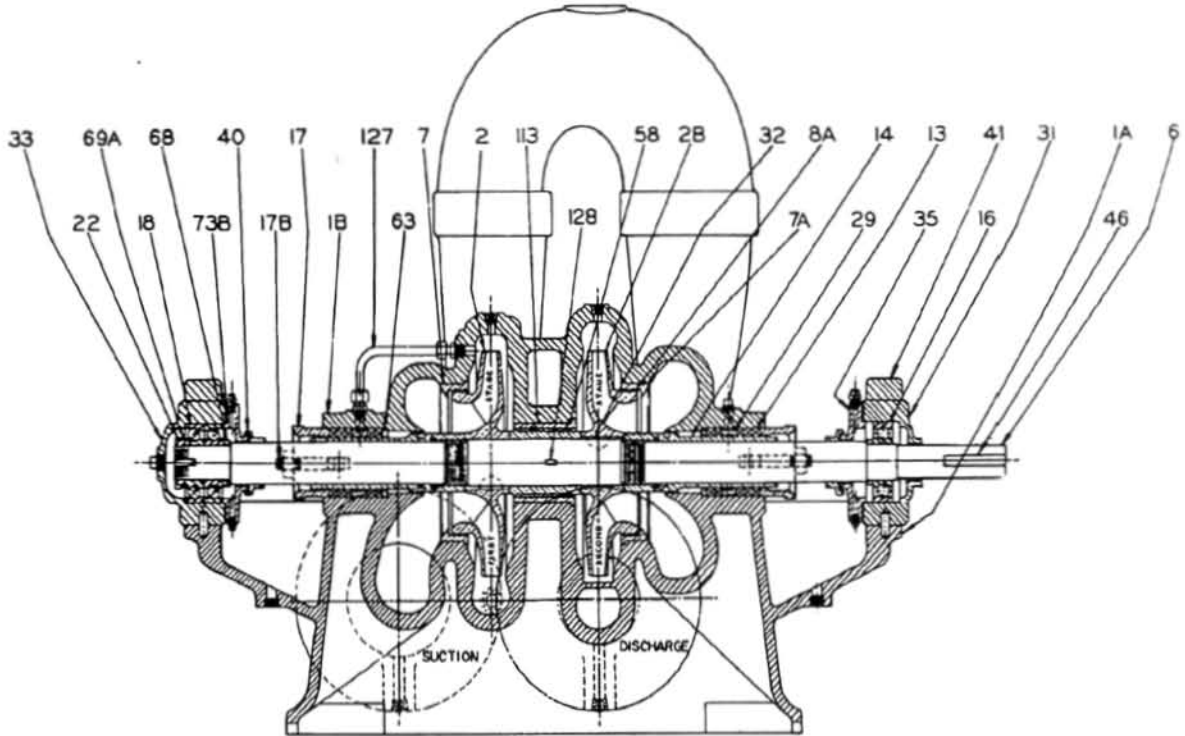
Materials of construction on pages 8 and 9 of Section 1420 apply to following pump cross sectional drawings pages 10 through 23

**HORIZONTAL SPLIT CASE PUMPS
 MULTISTAGE SINGLE SUCTION
 Type TU**



Peerless Pump Company
 Indianapolis, IN 46207-7026

**CROSS SECTIONAL DRAWING 1-1/2TU7 THROUGH 6TU16B
 GREASE LUBRICATED BEARINGS**



2876021
 Rev. 3-88

Parts List

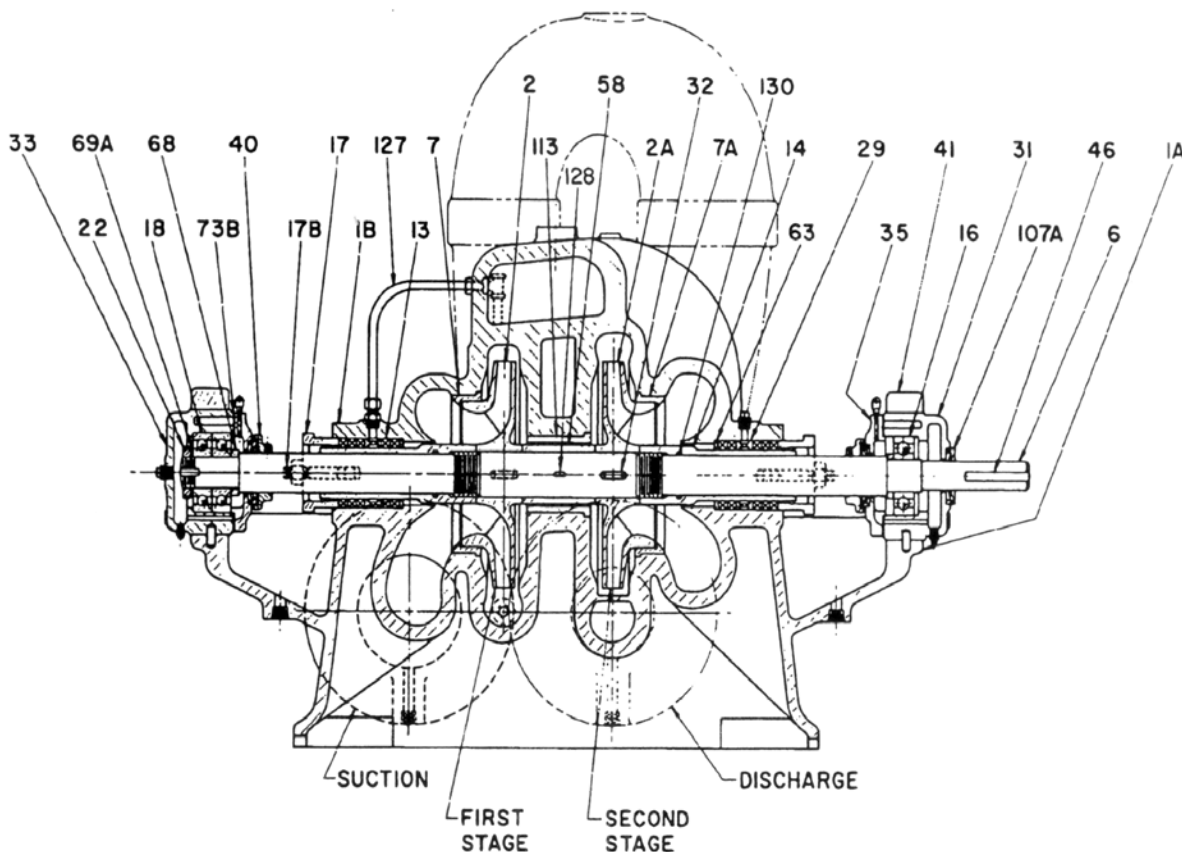
Item No.	Description	Item No.	Description
1A	Lower Casing	32	Impeller Key
1B	Upper Casing	33	Outboard Bearing Housing
2	Right Hand Impeller	35	Bearing Cover
2A	Left Hand Impeller	40	Water Deflector
6	Shaft	41	Bearing Cap
7	Right Hand Casing Ring	46	Coupling Key
7A	Left Hand Casing Ring	58	Interstage Sleeve
13	Packing	63	Stuffing Box Bushing
14	Shaft Sleeve	68	Shaft Collar
16	Outboard Bearing	69A	Bearing Lockwasher
17	Packing Gland	73A	Casing Gasket (Not Shown)
17B	Gland Bolt	73B	Bearing Cover Gasket
18	Outboard Bearing	113	Interstage Bushing
22	Bearing Locknut	127	Seal Piping
29	Lantern Ring	128	Interstage Sleeve Key
31	Inboard Bearing Housing	130	Shaft Sleeve "O"-Ring

Subject to change without notice



**HORIZONTAL SPLIT CASE PUMPS
MULTISTAGE SINGLE SUCTION
Type TU**

**CROSS SECTIONAL DRAWING 1-1/2TU7 THROUGH 6TU16B
OIL LUBRICATED BEARINGS**



4851914
Rev. 3-88

Parts List

Item No.	Description	Item No.	Description
1A	Lower Casing	33	Outboard Bearing Housing
1B	Upper Casing	35	Bearing Cover
2	Right Hand Impeller	40	Water Deflector
2A	Left Hand Impeller	41	Bearing Cap
6	Shaft	46	Coupling Key
7	Right Hand Casing Ring	58	Interstage Sleeve
7A	Left Hand Casing Ring	63	Stuffing Box Bushing
13	Packing	68	Shaft Collar
14	Shaft Sleeve	69A	Bearing Lockwasher
16	Outboard Bearing	73A	Casing Gasket (Not Shown)
17	Packing Gland	73B	Bearing Cover Gasket
17B	Gland Bolt	107A	Oil Retaining Shield
18	Outboard Bearing	113	Interstage Bushing
22	Bearing Locknut	125	Constant Level Oiler (Not Shown)
29	Lantern Ring	127	Seal Piping
31	Inboard Bearing Housing	128	Interstage Sleeve Key
32	Impeller Key	130	Shaft Sleeve "O"-Ring

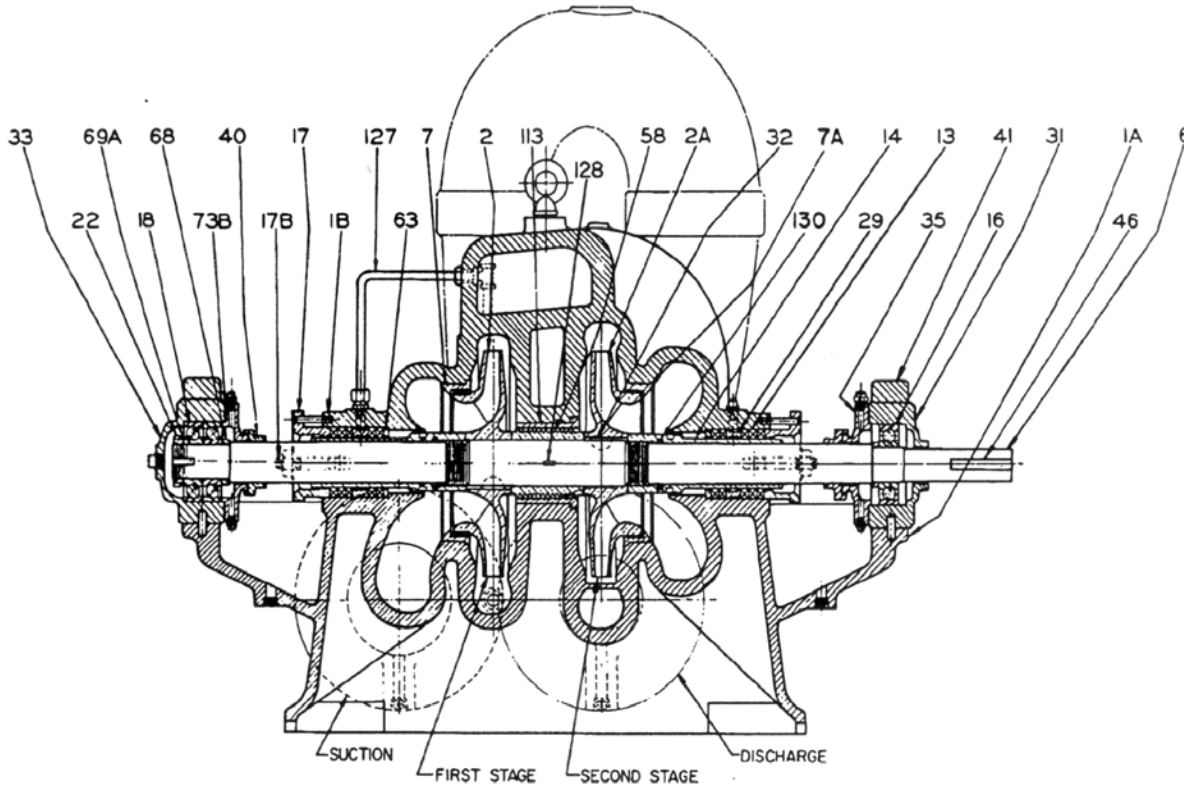
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**HORIZONTAL SPLIT CASE PUMPS
 MULTISTAGE SINGLE SUCTION
 Type TU**



Peerless Pump Company
 Indianapolis, IN 46207-7026

**CROSS SECTIONAL DRAWING 8TU16 AND 8TU16F
 GREASE LUBRICATED BEARINGS**



2874546
 Rev. 3-88

Parts List

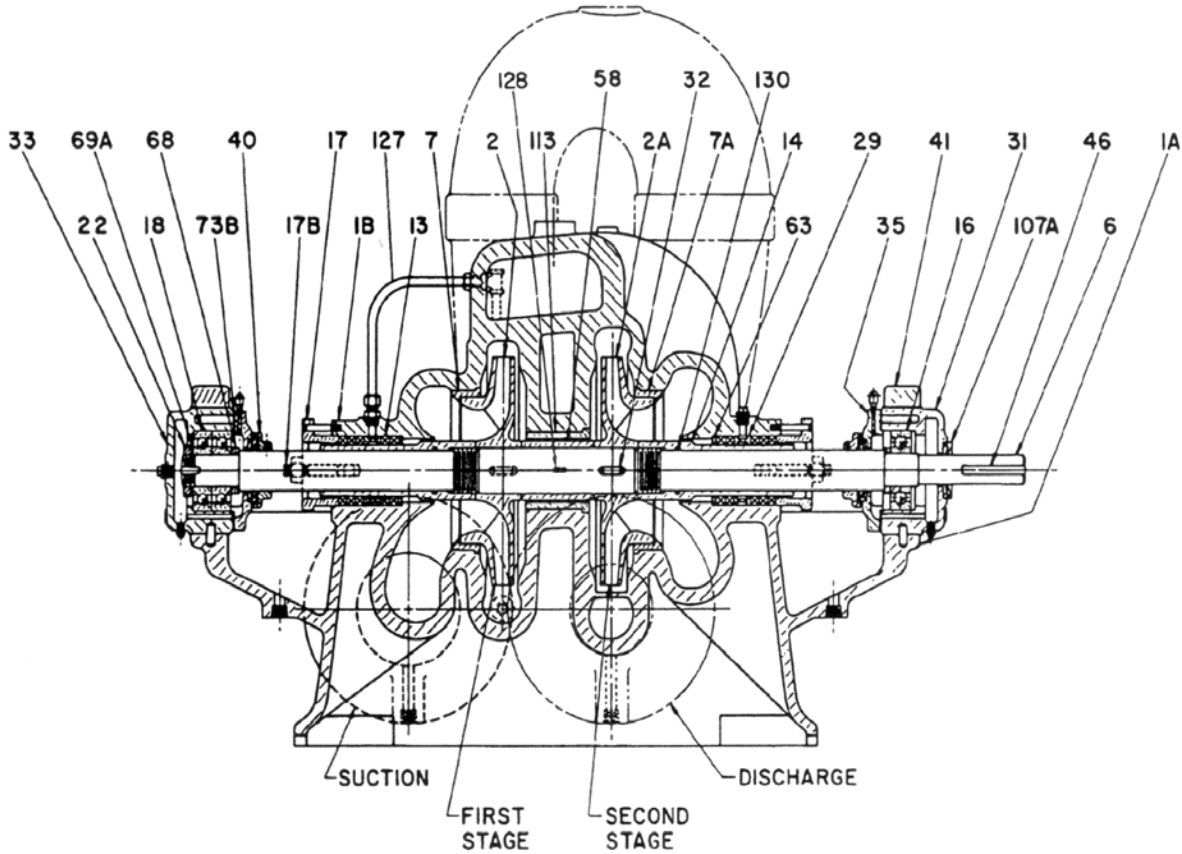
Item No.	Description	Item No.	Description
1A	Lower Casing	32	Impeller Key
1B	Upper Casing	33	Outboard Bearing Housing
2	Right Hand Impeller	35	Bearing Cover
2A	Left Hand Impeller	40	Water Deflector
6	Shaft	41	Bearing Cap
7	Right Hand Casing Ring	46	Coupling Key
7A	Left Hand Casing Ring	58	Interstage Sleeve
13	Packing	63	Stuffing Box Bushing
14	Shaft Sleeve	68	Shaft Collar
16	Outboard Bearing	69A	Bearing Lockwasher
17	Packing Gland	73A	Casing Gasket (Not Shown)
17B	Gland Bolt	73B	Bearing Cover Gasket
18	Outboard Bearing	113	Interstage Bushing
22	Bearing Locknut	127	Seal Piping
29	Lantern Ring	128	Interstage Sleeve Key
31	Inboard Bearing Housing	130	Shaft Sleeve "O"-Ring

Subject to change without notice



**HORIZONTAL SPLIT CASE PUMPS
MULTISTAGE SINGLE SUCTION
Type TU**

**CROSS SECTIONAL DRAWING 8TU16 AND 8TU16F
OIL LUBRICATED BEARINGS**



4858504
Rev. 3-88

Parts List

Item No.	Description	Item No.	Description
1A	Lower Casing	33	Outboard Bearing Housing
1B	Upper Casing	35	Bearing Cover
2	Right Hand Impeller	40	Water Deflector
2A	Left Hand Impeller	41	Bearing Cap
6	Shaft	46	Coupling Key
7	Right Hand Casing Ring	58	Interstage Sleeve
7A	Left Hand Casing Ring	63	Stuffing Box Bushing
13	Packing	68	Shaft Collar
14	Shaft Sleeve	69A	Bearing Lockwasher
16	Outboard Bearing	73A	Casing Gasket (Not Shown)
17	Packing Gland	73B	Bearing Cover Gasket
17B	Gland Bolt	107A	Oil Retaining Shield
18	Outboard Bearing	113	Interstage Bushing
22	Bearing Locknut	125	Constant Level Oiler (Not Shown)
29	Lantern Ring	127	Seal Piping
31	Inboard Bearing Housing	128	Interstage Sleeve Key
32	Impeller Key	130	Shaft Sleeve "O"-Ring

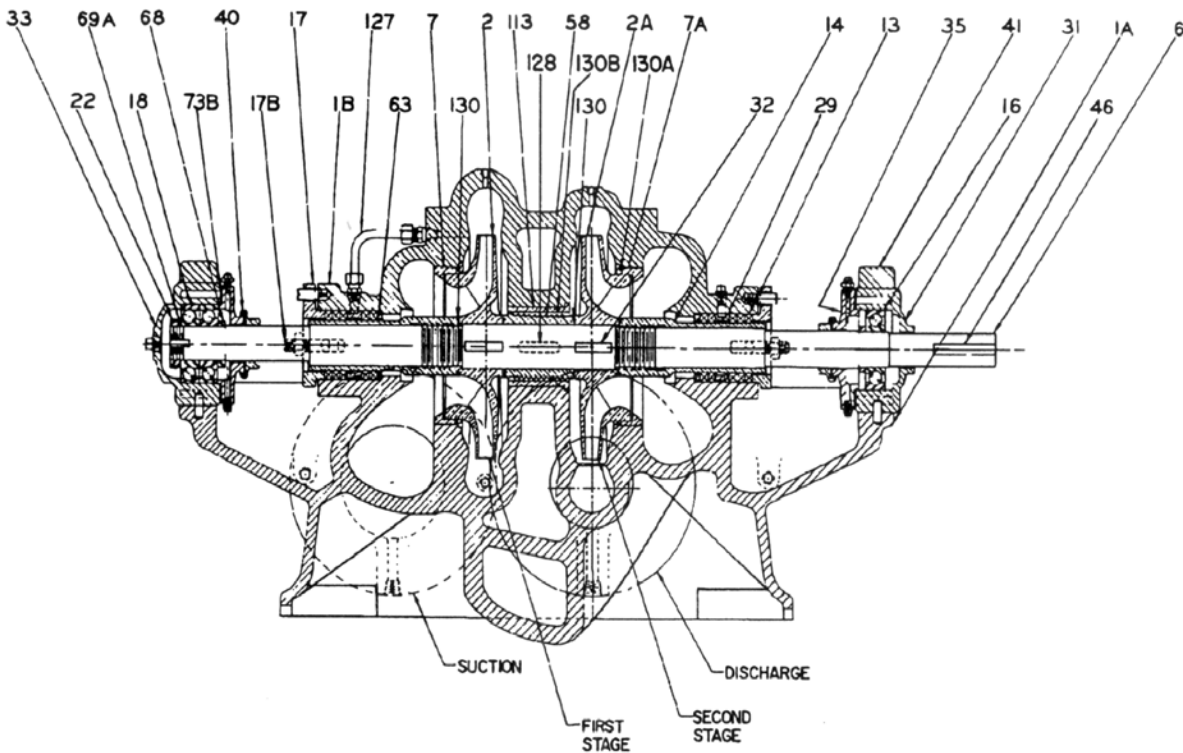
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HORIZONTAL SPLIT CASE PUMPS
MULTISTAGE SINGLE SUCTION
Type TU

CROSS SECTIONAL DRAWING 10TU22C
GREASE LUBRICATED BEARINGS



2880251
Rev. 1-89

Parts List

Item No.	Description	Item No.	Description
1A	Lower Casing	35	Bearing Cover
1B	Upper Casing	40	Water Deflector
2	Right Hand Impeller	41	Bearing Cap
2A	Left Hand Impeller	46	Coupling Key
6	Shaft	58	Interstage Sleeve
7	Right Hand Casing Ring	63	Stuffing Box Bushing
7A	Left Hand Casing Ring	68	Shaft Collar
13	Packing	69A	Bearing Lockwasher
14	Shaft Sleeve	73A	Casing Gasket (Not Shown)
16	Outboard Bearing	73B	Bearing Cover Gasket
17	Packing Gland	113	Interstage Bushing
17B	Gland Bolt	125	Constant Level Oiler (Not Shown)
18	Outboard Bearing	127	Seal Piping
22	Bearing Locknut	128	Interstage Sleeve Key
29	Lantern Ring	130	Shaft Sleeve "O"-Ring
31	Inboard Bearing Housing	130A	Casing Ring "O"-Ring
32	Impeller Key	130B	Interstage Bushing "O"-Ring
33	Outboard Bearing Housing		

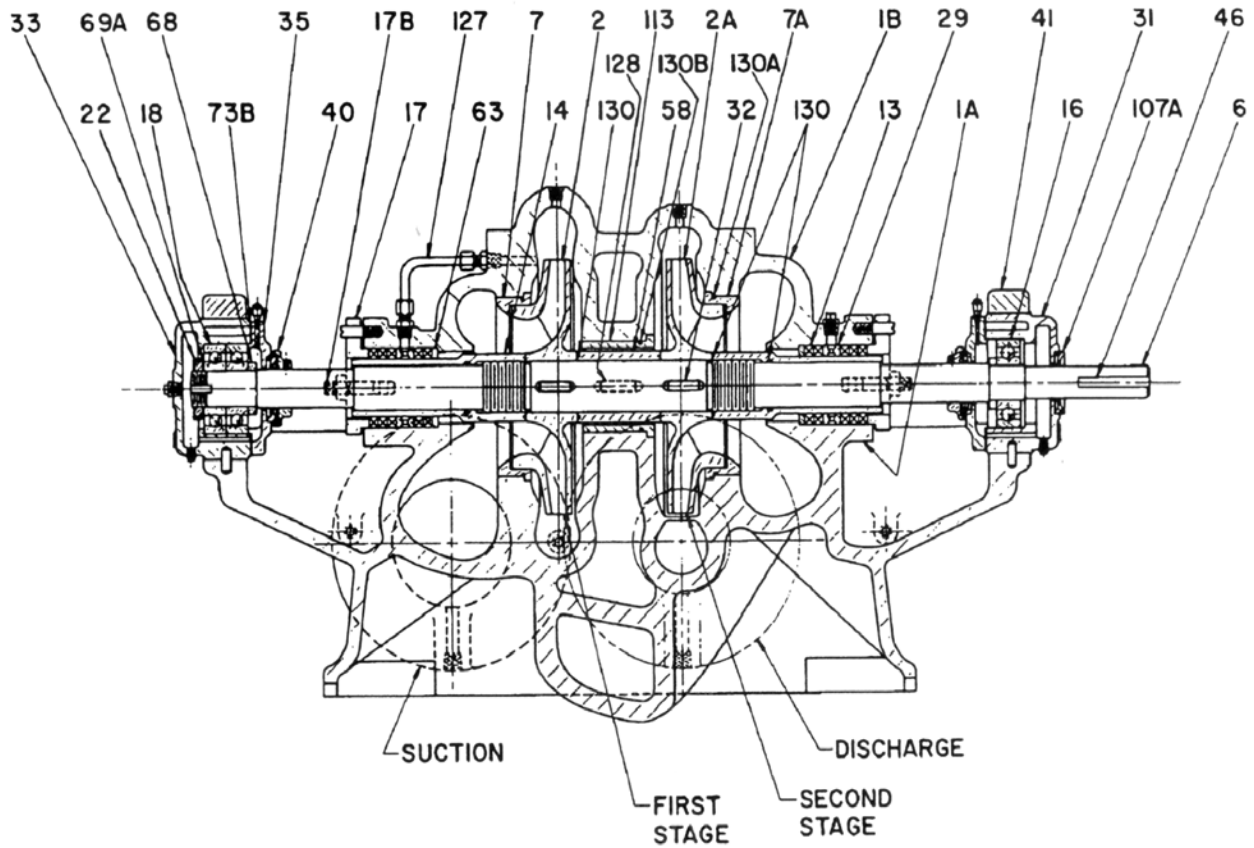
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**HORIZONTAL SPLIT CASE PUMPS
 MULTISTAGE SINGLE SUCTION
 Type TU**



Peerless Pump Company
 Indianapolis, IN 46207-7026

**CROSS SECTIONAL DRAWING 10TU22C
 OIL LUBRICATED BEARINGS**



4858503
 Rev. 1-89

Parts List

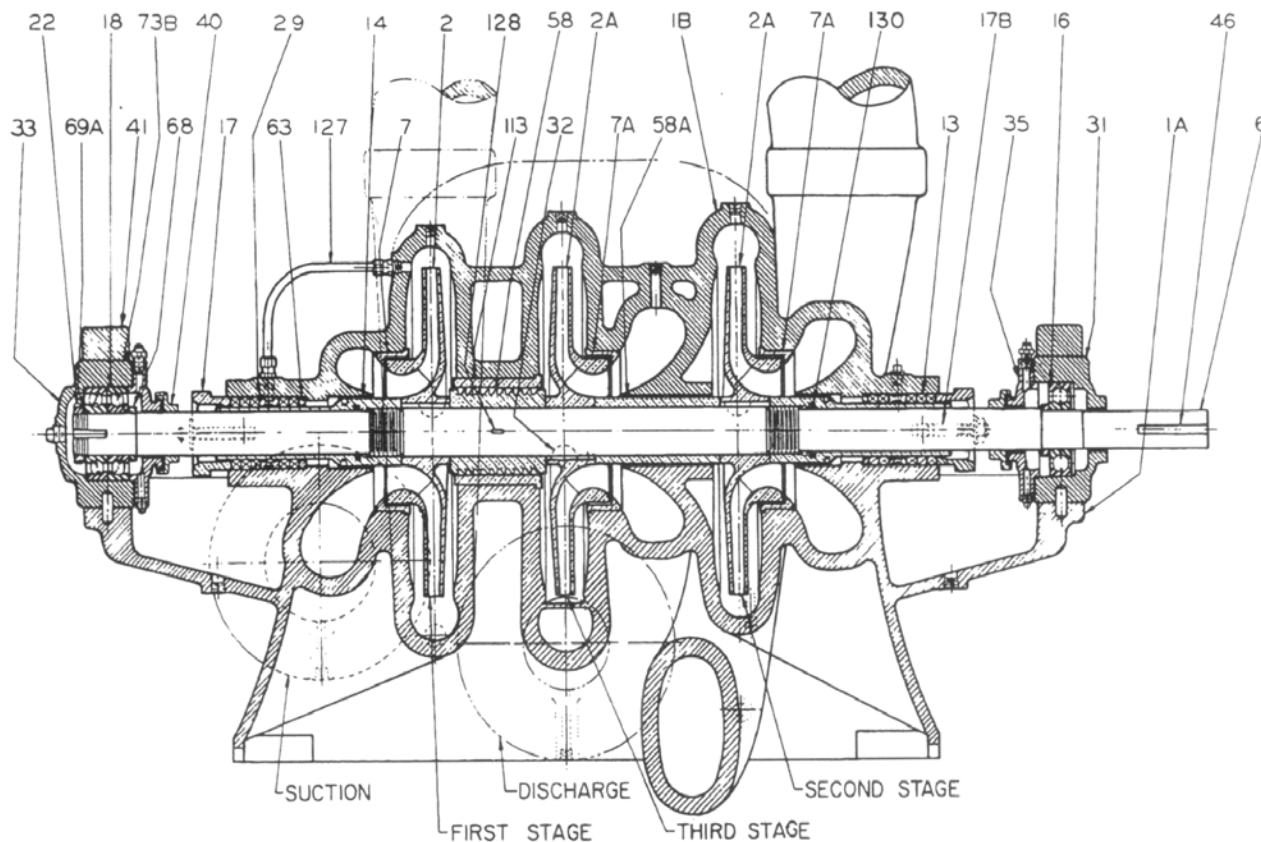
Item No.	Description	Item No.	Description
1A	Lower Casing	35	Bearing Cover
1B	Upper Casing	40	Water Deflector
2	Right Hand Impeller	41	Bearing Cap
2A	Left Hand Impeller	46	Coupling Key
6	Shaft	58	Interstage Sleeve
7	Right Hand Casing Ring	63	Stuffing Box Bushing
7A	Left Hand Casing Ring	68	Shaft Collar
13	Packing	69A	Bearing Lockwasher
14	Shaft Sleeve	73A	Casing Gasket (Not Shown)
16	Outboard Bearing	73B	Bearing Cover Gasket
17	Packing Gland	107A	Oil Retaining Shield
17B	Gland Bolt	113	Interstage Bushing
18	Outboard Bearing	125	Constant Level Oiler (Not Shown)
22	Bearing Locknut	127	Seal Piping
29	Lantern Ring	128	Interstage Sleeve Key
31	Inboard Bearing Housing	130	Shaft Sleeve "O"-Ring
32	Impeller Key	130A	Casing Ring "O"-Ring
33	Outboard Bearing Housing	130B	Interstage Bushing "O"-Ring

Subject to change without notice



**HORIZONTAL SPLIT CASE PUMPS
MULTISTAGE SINGLE SUCTION
Type TUT**

**CROSS SECTIONAL DRAWING 1-1/2TU7 THROUGH 5TUT16B
GREASE LUBRICATED BEARINGS**



2874541
Rev. 3-88

Parts List

Item No.	Description	Item No.	Description
1A	Lower Casing	35	Bearing Cover
1B	Upper Casing	40	Water Deflector
2	Right Hand Impeller	41	Bearing Cap
2A	Left Hand Impeller	46	Coupling Key
6	Shaft	58	Interstage Sleeve
7	Right Hand Casing Ring	58A	Interstage Sleeve A
7A	Left Hand Casing Ring	63	Stuffing Box Bushing
13	Packing	68	Shaft Collar
14	Shaft Sleeve	69A	Bearing Lockwasher
16	Outboard Bearing	73A	Casing Gasket (Not Shown)
17	Packing Gland	73B	Bearing Cover Gasket
17B	Gland Bolt	113	Interstage Bushing
18	Outboard Bearing	127	Seal Piping
22	Bearing Locknut	128	Interstage Sleeve Key
29	Lantern Ring	130	Shaft Sleeve "O"-Ring
31	Inboard Bearing Housing		
32	Impeller Key		
33	Outboard Bearing Housing		

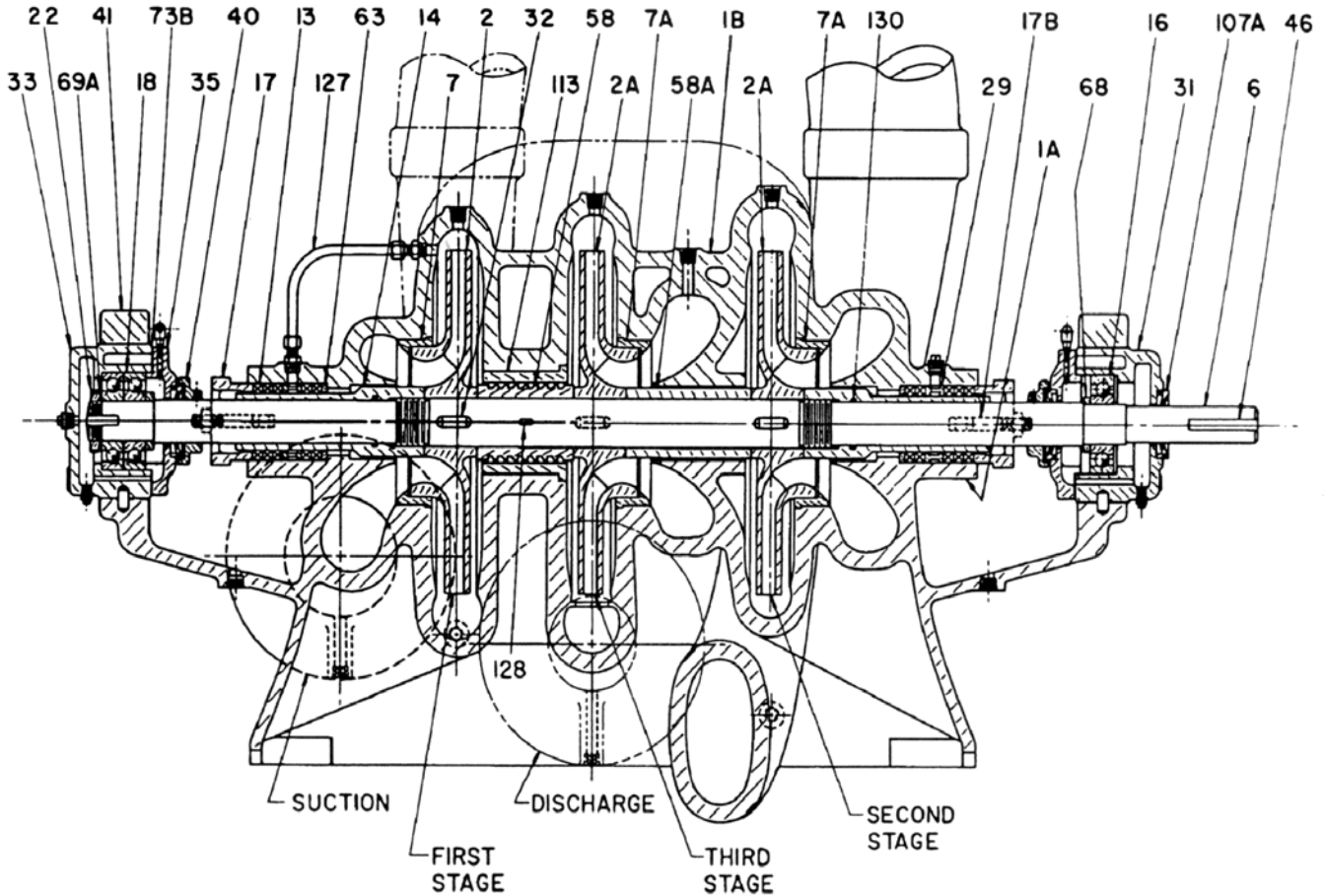
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**HORIZONTAL SPLIT CASE PUMPS
 MULTISTAGE SINGLE SUCTION
 Type TUT**



Peerless Pump Company
 Indianapolis, IN 46207-7026

**CROSS SECTIONAL DRAWING 1-1/2TUT7 THROUGH 5TUT16B
 OIL LUBRICATED BEARINGS**



4858505
 Rev. 3-88

Parts List

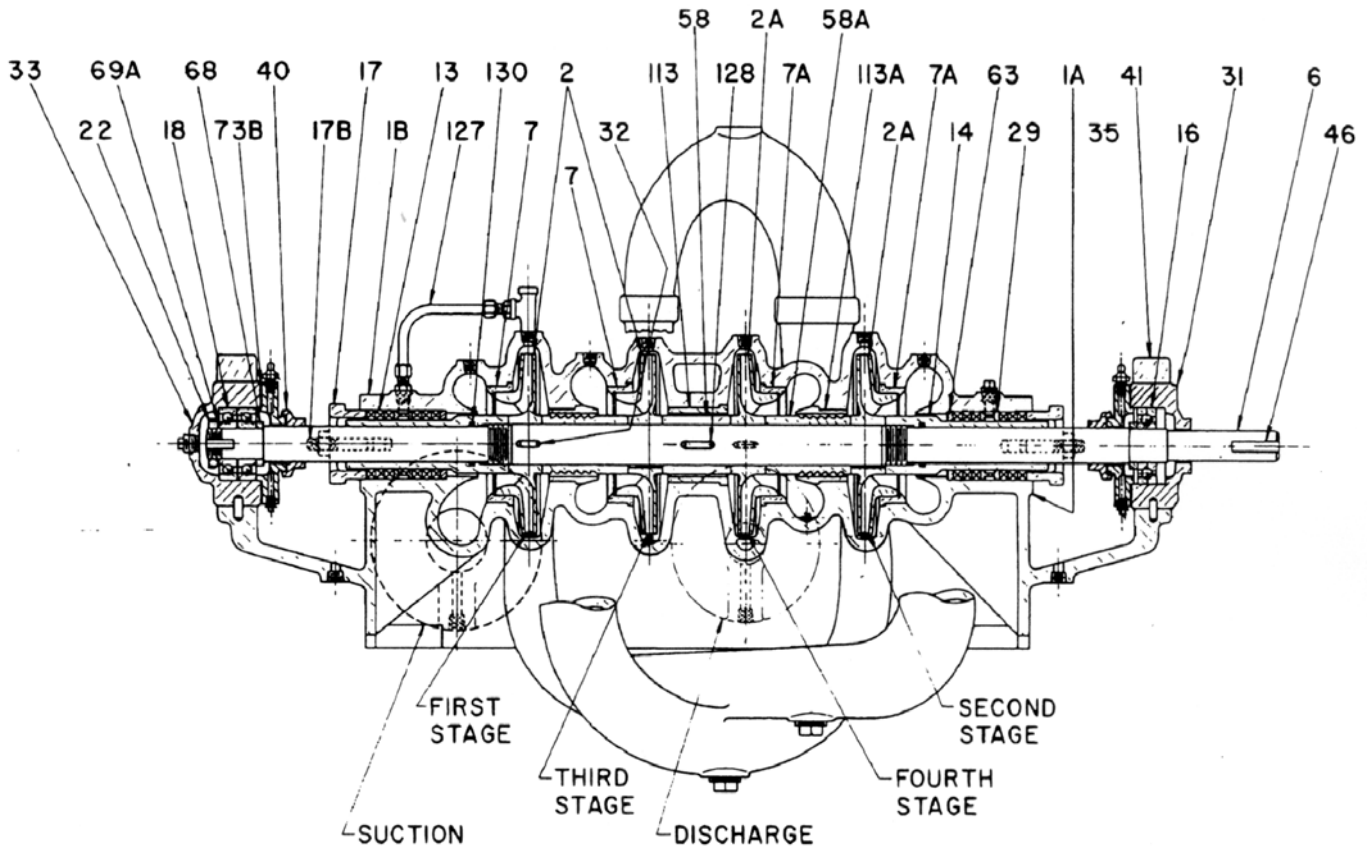
Item No.	Description	Item No.	Description
1A	Lower Casing	35	Bearing Cover
1B	Upper Casing	40	Water Deflector
2	Right Hand Impeller	41	Bearing Cap
2A	Left Hand Impeller	46	Coupling Key
6	Shaft	58	Interstage Sleeve
7	Right Hand Casing Ring	58A	Interstage Sleeve A
7A	Left Hand Casing Ring	63	Stuffing Box Bushing
13	Packing	68	Shaft Collar
14	Shaft Sleeve	69A	Bearing Lockwasher
16	Outboard Bearing	73A	Casing Gasket (Not Shown)
17	Packing Gland	73B	Bearing Cover Gasket
17B	Gland Bolt	107A	Oil Retaining Shield
18	Outboard Bearing	113	Interstage Bushing
22	Bearing Locknut	125	Constant Level Oiler (Not Shown)
29	Lantern Ring	127	Seal Piping
31	Inboard Bearing Housing	128	Interstage Sleeve Key
32	Impeller Key	130	Shaft Sleeve "O"-Ring
33	Outboard Bearing Housing		

Subject to change without notice



HORIZONTAL SPLIT CASE PUMPS
MULTISTAGE SINGLE SUCTION
Type TUT

CROSS SECTIONAL DRAWING 1-1/2TUT7 THROUGH 4TUT10 - 4 Stage
GREASE LUBRICATED BEARINGS



2874544
Rev. 1-85

Parts List

Item No.	Description	Item No.	Description
1A	Lower Casing	33	Outboard Bearing Housing
1B	Upper Casing	35	Bearing Cover
2	Right Hand Impeller	40	Water Deflector
2A	Left Hand Impeller	41	Bearing Cap
6	Shaft	46	Coupling Key
7	Right Hand Casing Ring	58	Interstage Sleeve
7A	Left Hand Casing Ring	58A	Interstage Sleeve A
13	Packing	63	Stuffing Box Bushing
14	Shaft Sleeve	68	Shaft Collar
16	Outboard Bearing	69A	Bearing Lockwasher
17	Packing Gland	73A	Casing Gasket (Not Shown)
17B	Gland Bolt	73B	Bearing Cover Gasket
18	Outboard Bearing	113	Interstage Bushing
22	Bearing Locknut	113A	Interstage Bushing - A
29	Lantern Ring	127	Seal Piping
31	Inboard Bearing Housing	128	Interstage Sleeve Key
32	Impeller Key	130	Shaft Sleeve "O"-Ring

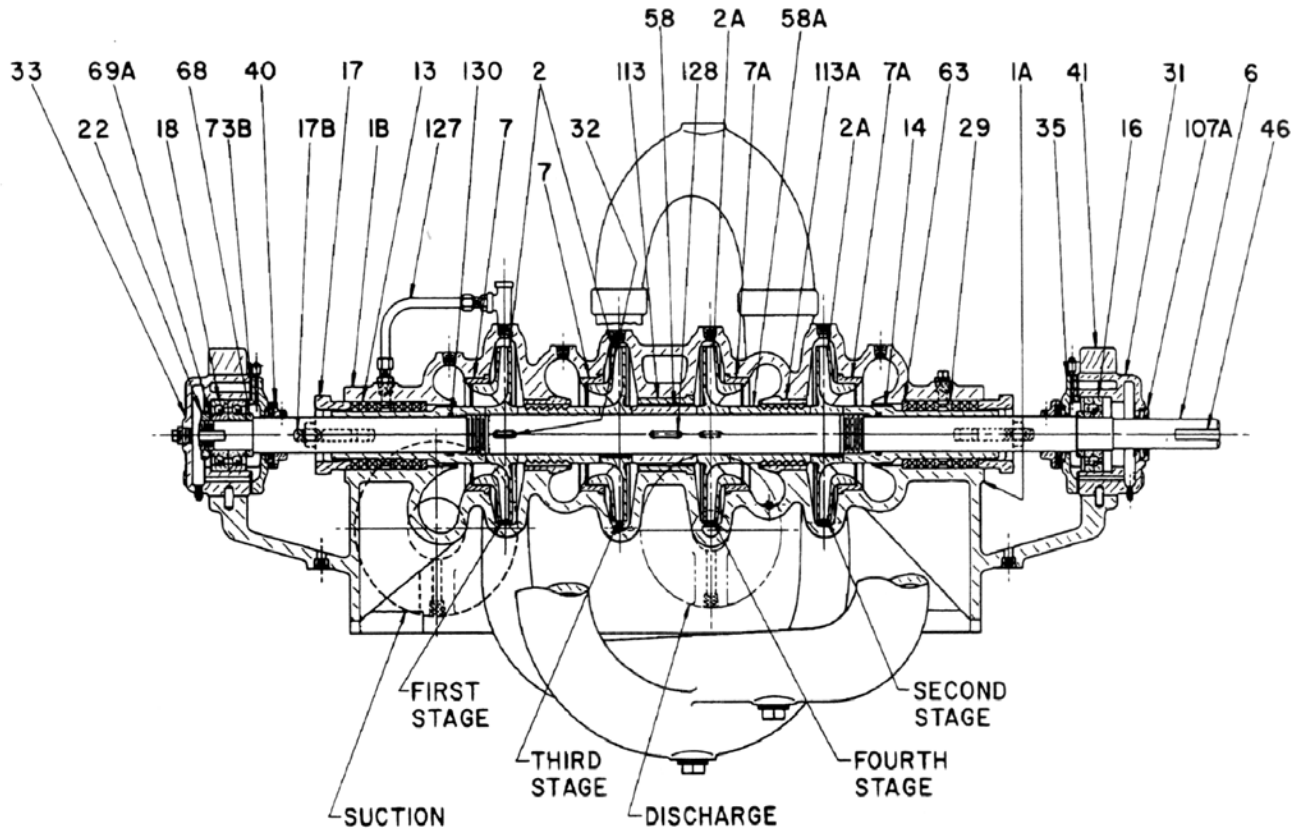
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**HORIZONTAL SPLIT CASE PUMPS
 MULTISTAGE SINGLE SUCTION
 Type TUT**



Peerless Pump Company
 Indianapolis, IN 46207-7026

**CROSS SECTIONAL DRAWING 1-1/2TUT7 THROUGH 4TUT10 - 4 Stage
 OIL LUBRICATED BEARINGS**



4858506

Parts List

Item No.	Description	Item No.	Description
1A	Lower Casing	35	Bearing Cover
1B	Upper Casing	40	Water Deflector
2	Right Hand Impeller	41	Bearing Cap
2A	Left Hand Impeller	46	Coupling Key
6	Shaft	58	Interstage Sleeve
7	Right Hand Casing Ring	58A	Interstage Sleeve - A
7A	Left Hand Casing Ring	63	Stuffing Box Bushing
13	Packing	68	Shaft Collar
14	Shaft Sleeve	69A	Bearing Lockwasher
16	Outboard Bearing	73A	Casing Gasket (Not Shown)
17	Packing Gland	73B	Bearing Cover Gasket
17B	Gland Bolt	107A	Oil Retaining Shield
18	Outboard Bearing	113	Interstage Bushing
22	Bearing Locknut	113A	Interstage Bushing - A
29	Lantern Ring	125	Constant Level Oiler (Not Shown)
31	Inboard Bearing Housing	127	Seal Piping
32	Impeller Key	128	Interstage Sleeve Key
33	Outboard Bearing Housing	130	Shaft Sleeve "O"-Ring

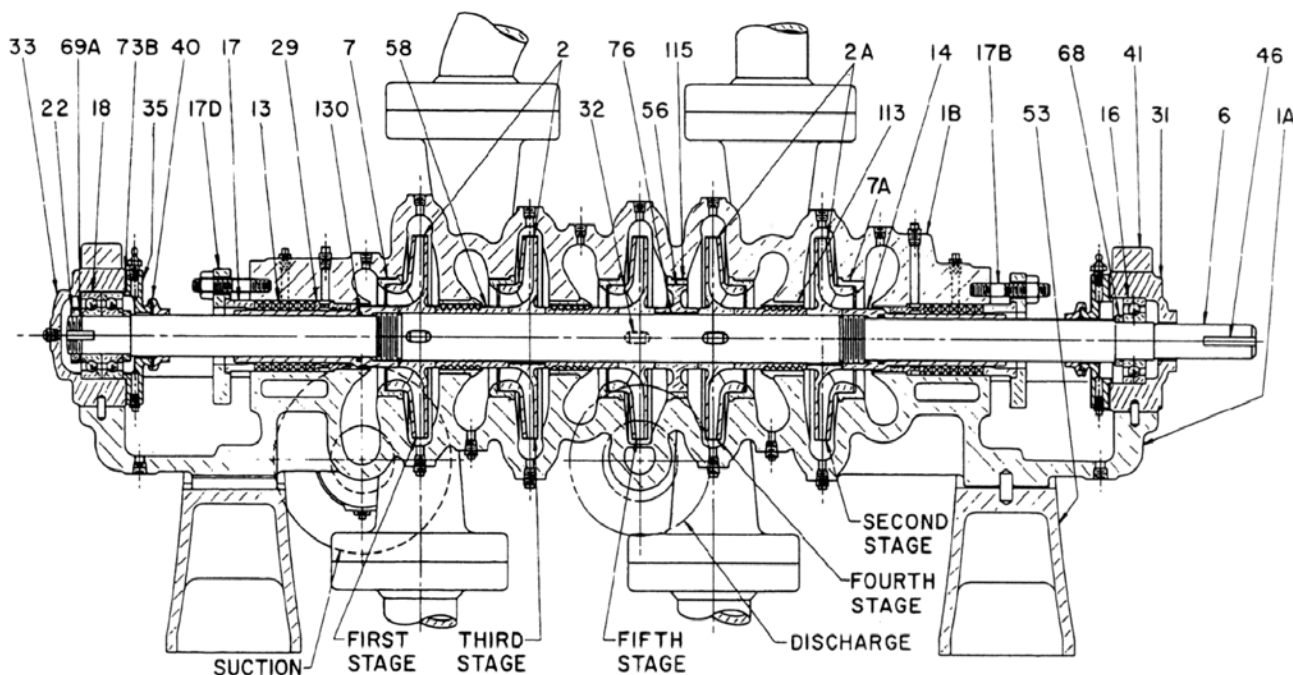
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**HORIZONTAL SPLIT CASE PUMPS
MULTISTAGE SINGLE SUCTION**

Type TUT

**CROSS SECTIONAL DRAWING 2TUT9 - 5 STAGE
GREASE LUBRICATED BEARINGS**



2874543

Rev. 1-85

Parts List

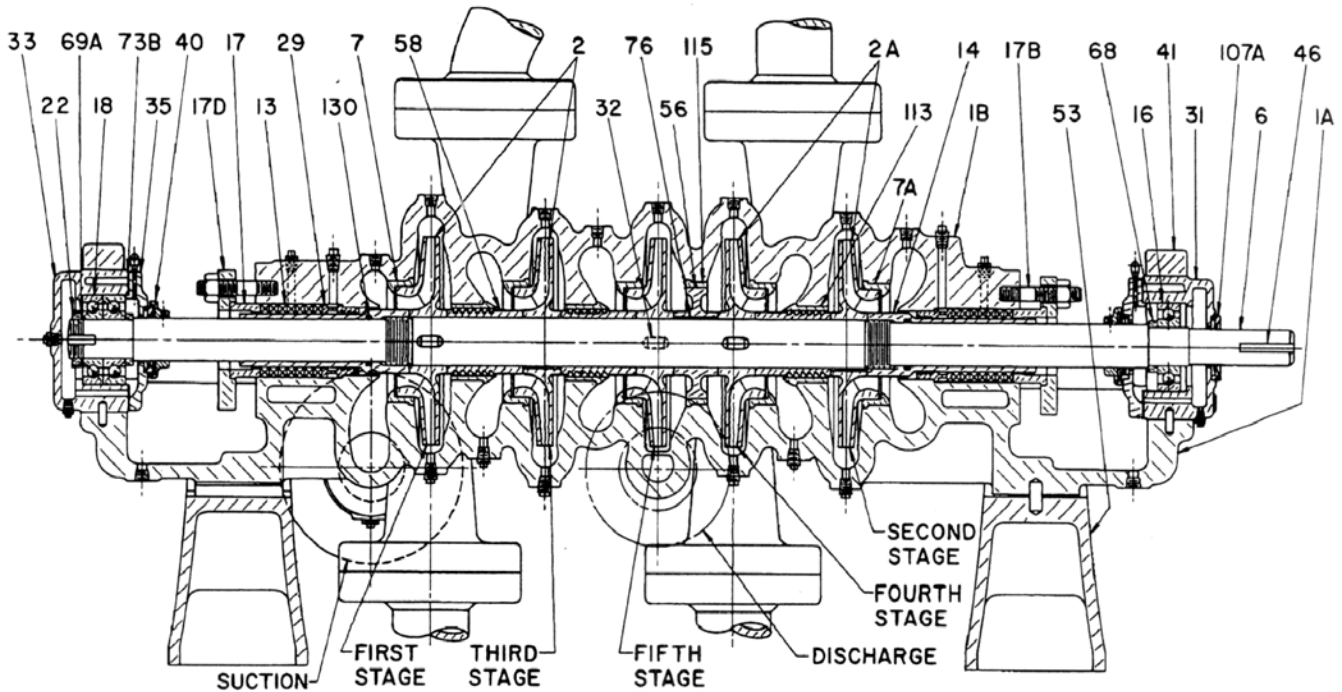
Item No.	Description	Item No.	Description
1A	Lower Casing	33	Outboard Bearing Housing
1B	Upper Casing	35	Bearing Cover
2	Right Hand Impeller	40	Water Deflector
2A	Left Hand Impeller	41	Bearing Cap
6	Shaft	46	Coupling Key
7	Right Hand Casing Ring	53	Base
7A	Left Hand Casing Ring	56	Balancing Disc
13	Packing	58	Interstage Sleeve
14	Shaft Sleeve	63	Stuffing Box Bushing
16	Outboard Bearing	68	Shaft Collar
17	Packing Gland	69A	Bearing Lockwasher
17B	Gland Bolt	73A	Casing Gasket (Not Shown)
17D	Gland Flange	73B	Bearing Cover Gasket
18	Outboard Bearing	76	Balance Disc Key
22	Bearing Locknut	113	Interstage Bushing
29	Lantern Ring	115	Balance Disc Ring
31	Inboard Bearing Housing	127	Seal Piping
32	Impeller Key	130	Shaft Sleeve "O"-Ring

**HORIZONTAL SPLIT CASE PUMPS
 MULTISTAGE SINGLE SUCTION
 Type TUT**



Peerless Pump Company
 Indianapolis, IN 46207-7026

**CROSS SECTIONAL DRAWING 2TUT9 - 5 STAGE
 OIL LUBRICATED BEARINGS**



4848507

Parts List

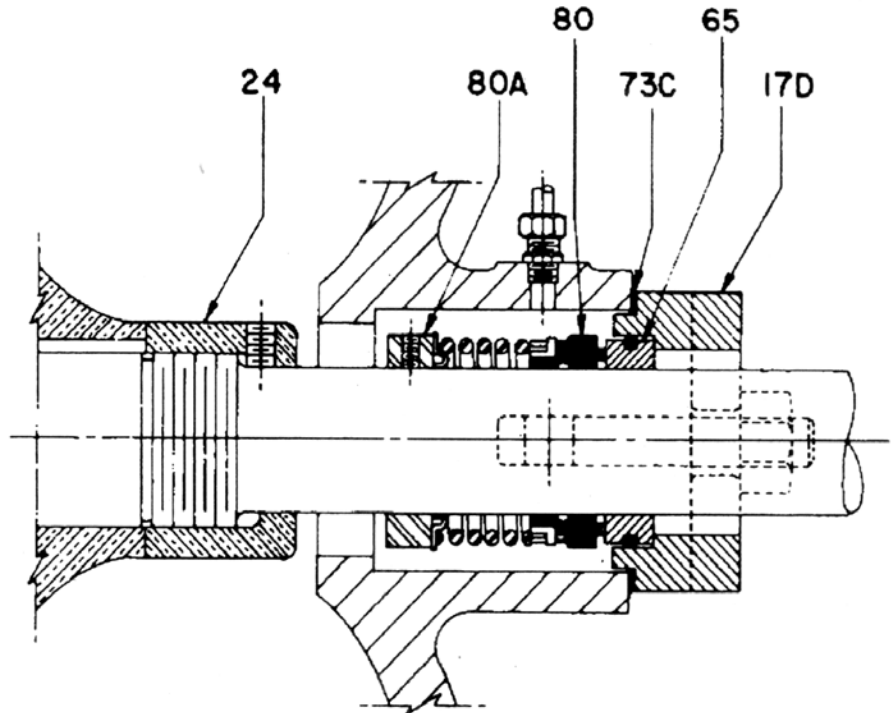
Item No.	Description	Item No.	Description
1A	Lower Casing	33	Outboard Bearing Housing
1B	Upper Casing	35	Bearing Cover
2	Right Hand Impeller	40	Water Deflector
2A	Left Hand Impeller	41	Bearing Cap
6	Shaft	46	Coupling Key
7	Right Hand Casing Ring	53	Base
7A	Left Hand Casing Ring	56	Balancing Disc
13	Packing	58	Interstage Sleeve
14	Shaft Sleeve	63	Stuffing Box Bushing
16	Outboard Bearing	68	Shaft Collar
17	Packing Gland	69A	Bearing Lockwasher
17B	Gland Bolt	73A	Casing Gasket (Not Shown)
17D	Gland Flange	73B	Bearing Cover Gasket
18	Outboard Bearing	76	Balance Disc Key
22	Bearing Locknut	113	Interstage Bushing
29	Lantern Ring	115	Balance Disc Ring
31	Inboard Bearing Housing	125	Constant Level Oiler (Not Shown)
32	Impeller Key	130	Shaft Sleeve "O"-Ring

Subject to change without notice



HORIZONTAL SPLIT CASE PUMPS
MULTISTAGE SINGLE SUCTION
Type TU, TUT

CRANE TYPE 1 UNBALANCED MECHANICAL SEAL DETAIL
(STANDARD CONSTRUCTION INSTALLED OVER SHAFT)



MATERIALS OF CONSTRUCTION

ITEM	DESCRIPTION	STD MATERIAL	OPTIONAL MATERIAL	
17D	SEAL FLANGE	STEEL	18-8 STAINLESS STEEL	
24	IMPELLER LOCKNUT	BRONZE	416 STAINLESS STEEL	
65	STATIONARY SEAT	NI-RESIST	SILICON CARBIDE , TUNGSTEN CARBIDE	
73C	SEAL FLANGE GASKET	VEGETABLE FIBER	-	
80	SEAL ROTARY	FLEXIBLE MEMBERS	BUNA RUBBER	EPR, VITON
		O-RINGS	BUNA RUBBER	EPR, VITON
		SPRING	18-8 STAINLESS STEEL	-
		METAL PARTS	18-8 STAINLESS STEEL	-
		WASHER	CARBON	-
80A	SEAL SET COLLAR	STEEL W/ 18-8 SS SET SCREWS	BRASS, 18-8 STAINLESS STEEL	

**HORIZONTAL SPLIT CASE PUMPS
 MULTISTAGE SINGLE SUCTION
 Type TU, TUT**



**BYPASS ORIFICE UNION
 APPLICATION & SELECTION**

When a centrifugal pump is operated at shut off or zero capacity, there is a danger of the pump overheating due to injected energy into liquid not being dissipated. To prevent overheating, a small quantity of pumped liquid should be bypassed from the discharge line to the suction supply source, but not directly to pump suction. If the pump is used for boiler feed water service the bypassed water should be discharged into the boiler feed water heater.

To reduce temperature in the casing, a 1/2 inch bypass cup orifice union is used to control the bypass capacity. The bypass union is installed in a line between discharge line and suction source. In sizing the orifice diameter, the maximum temperature rise is estimated to determine the required bypass capacity. It is not possible to make a general rule as to the maximum allowable temperature rise, for if there is insufficient NPSH available for higher temperatures, an extreme temperature rise may cause liquid vaporization and cavitation which is detrimental to the pump.

Approximately a 10-15 °F. temperature rise is maximum for a boiler feed pump. The maximum for a cold water pump (130 °F. or less) can be up to 50 °F. rise. To calculate the bypass capacity use the following equation:

$$GPM = \frac{5.3 \times Bhp}{T}$$

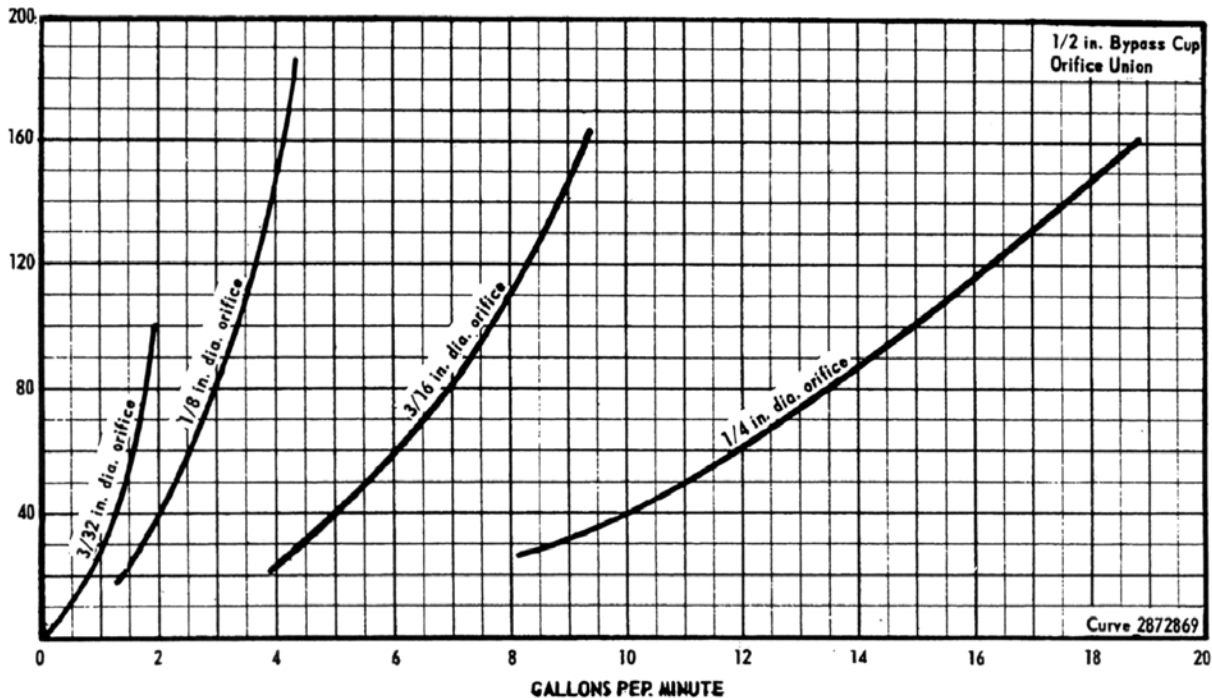
GPM = Liquid capacity to be bypassed.
 Bhp = Pump horsepower required at shut-off (or zero capacity)- refer to pump performance curve
 T = Maximum allowable temperature rise °F.

Example: 10° F. rise allowable, pump horsepower at zero capacity = 20, estimated differential pressure 120 PSI
 (difference between discharge pressure and suction source pressure)

$$GPM = \frac{5.3 \times 20}{10} = 10.6 \text{ GPM (to be bypassed)}$$

Referring to curve 2872869 below, at 120 PSI differential pressure the required orifice size is between 3/16 and 1/4 inch, thus 1/4 inch should be used. If the larger orifice bypasses considerably more than the minimum GPM required or if pump discharge pressure exceeds 170 PSI a throttling valve must be installed upstream of orifice union to reduce differential pressure within the confines of curve to maintain minimum bypass GPM. Refer to drawing DT 2899636 page 2 (Section 1420 page 25) for installation and recommended piping for valve and orifice union.

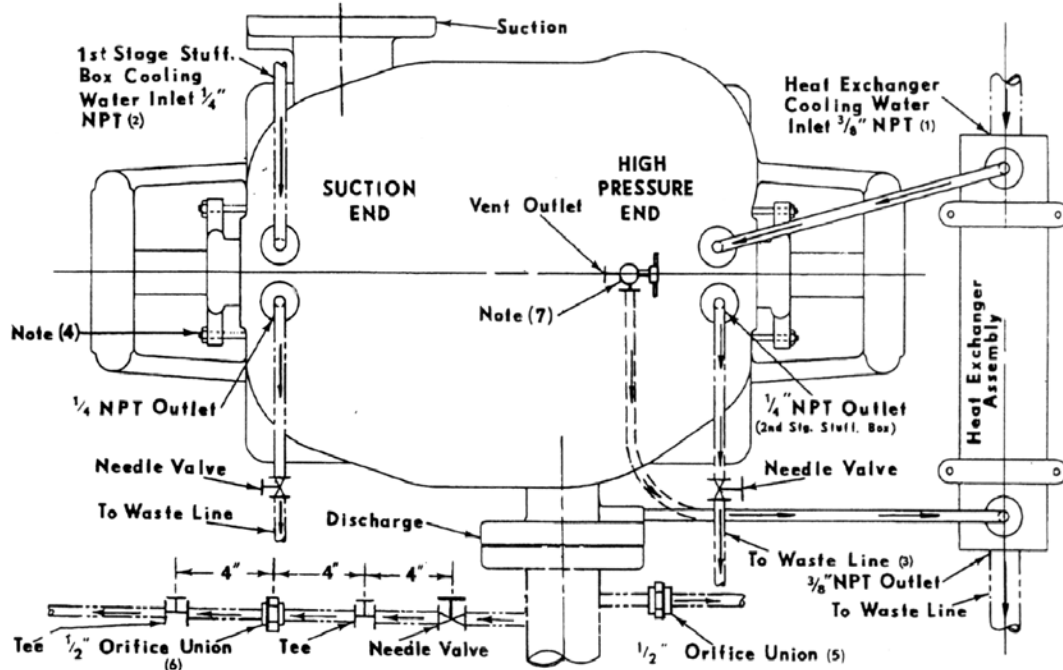
Caution: In selecting a pump requiring a bypass orifice union, the design point of the pump is the required pump capacity plus the calculated bypass capacity. Also the suction supply NPSH must be adequate for the required pump NPSH at design point taking liquid temperature into consideration.



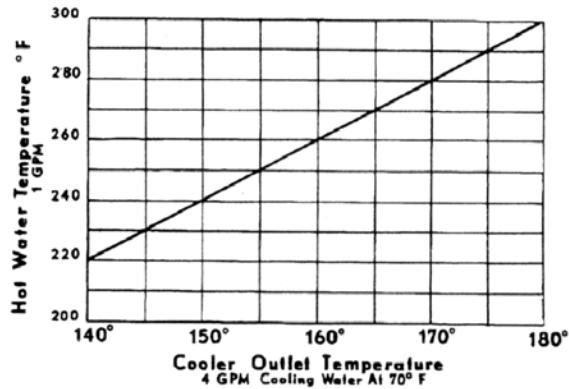


**HORIZONTAL SPLIT CASE PUMPS
MULTISTAGE SINGLE SUCTION
Type TU, TUT**

SERVICE PIPING DIAGRAM - BOILER FEED PUMPS (PACKED TYPE ONLY)



Piping Legend:
 - - - - - TUT only, piping furnished by factory
 _____ Piping furnished by factory
 - - - - - Piping to be furnished by others



Notes:

- (1) Pipe from plant water supply. Adjust capacity to minimum shown on cooling water curve for heat exchanger.
- (2) Pipe from plant water supply. Pressure must exceed suction pressure of pump.
- (3) 2nd stage stuffing box cooling water waste may be piped back to suction to conserve liquid.
- (4) Caution: Great care must be taken to wear the packing in gradually. See instruction booklet No. 2880549 for further details.
- (5) Orifice union piping arrangement for 170 PSI differential or less. Install orifice union with concave surface of orifice plate upstream. Arrange bypass piping so that friction loss does not exceed 10 PSI. Bypass should be piped from discharge to the feed water circuit, preferably ahead of the low pressure feed water heating equipment and not directly to pump suction.
- (6) Orifice union piping arrangement for over 170 PSI differential (or for reducing bypass flow to minimum required per curve 2872869). Reduce differential pressure to confines of curve 2872869 according to orifice diameter furnished by installing pressure gauges in pipe tees located as shown and throttling with needle valve. 1/2" tees, gauges and valves to be furnished by others. See note 5 for balance of piping instructions.
- (7) Cooler piping furnished by factory on TUT 3 and 4 stage pumps. Piped from 2nd stage vent tee between casing and vent valve.
- (8) (General) After adjusting needle valves to recommended capacities remove needle valve handles to prevent tampering.

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